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H.R. _____, A DISCUSSION DRAFT ADDRESSING BROADBAND MAPPING AND DATA COLLECTION

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

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H.R. _____, A DISCUSSION DRAFT ADDRESSING BROADBAND MAPPING AND DATA COLLECTION

THURSDAY, MAY 17, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TELECOMMUNICATIONS
AND THE INTERNET,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:00 a.m., in room 2123 of the Rayburn House Office Building, Hon. Edward J. Markey (chairman) presiding.

Members present: Representatives Markey, Doyle, Inslee, Boucher, Stupak, Green, Upton, Hastert, Shimkus, Wilson, Pickering, Walden, Terry, and Barton.

Also present: Representatives Whitfield and Blackburn.

Staff present: Johanna Shelton, Colin Crowell, Tim Powderly, Maureen Flood, David Vogel, and Kyle Chapman.

OPENING STATEMENT OF HON. EDWARD J. MARKEY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF MASSACHUSETTS

Mr. MARKEY. Good morning, ladies and gentlemen. I would ask everyone if they could assemble so that we can proceed with this very important hearing.

I want to begin by emphasizing that the legislation addressing broadband data collection and mapping issues is in draft form and we welcome suggestions for improvements to it. My goal is to work towards a bipartisan consensus bill, and I look forward to working with our Ranking Member Upton, full committee Ranking Member Joe Barton, Chairman Dingell, of course, and our other committee colleagues on this measure as we move forward.

I believe at this point that there is a growing consensus, not unanimity, around the fact that current data collection methods used by the Federal Communications Commission are inadequate and highly flawed. Currently, the FCC counts a single broadband subscriber in a five-digit ZIP code as indicating the entire ZIP code has broadband availability even if the sole subscriber is a business and not a residential consumer. This can lead to highly inaccurate and overly generous notions of actual broadband availability, particularly in rural areas where ZIP codes are quite large. In addition, the Telecommunications Act compels the FCC to address the nationwide availability of advanced telecommunications capability,

which Congress defined as having high-speed capability. The FCC implemented this provision and defined high speed in 1999 as meaning 200 kilobits per second. The problem is that the FCC has not kept pace with the times or the technology. Simply put, in 2007 terms, 200 kilobits per second is not high speed. The bill proposes increasing this tenfold to 2 megabits per second. It is important to keep in mind that from an international perspective, 2 megabits per second isn't even that fast. For instance, in our recent hearing on international broadband issues, we learned that in the United Kingdom, British Telecom and dozens of other competitors use advanced technology to get significantly more speed out of existing copper wire connections than we do here, approximately 8 megabits per second, and that they have plans to boost it to 16 megabits per second very soon. In Japan, consumers can get 50 megabits per second, so having the FCC go from 200 kilobits to 2 megabits for purposes of national high-speed broadband assessment is relatively modest in this context.

In addition, under almost any set of measurements, the United States lags other nations not only in availability and speed, but also in value. The 50-megabit-per-second service in Japan, for instance, which is not even available to residential consumers in this country, is available to Japanese consumers for roughly $30. Here in the United States, consumers typically pay $20 for about 1 megabit of service and $30 to $40 for roughly 4 megabits of service. Now, all of these are advertised speeds, and depending upon the network and the time of day, the actual speeds consumers enjoy are often much lower, but measuring high-speed broadband in kilobits is akin to assessing broadband using horse-and-buggy metrics. A 21st century broadband strategy should not use a horsepower measurement of success.

The state of knowledge around the status of broadband services in the United States also affects the ability of policymakers to make sound decisions. For instance, the Federal Government can do a much better job in reforming multibillion-dollar grant and subsidy programs whether at the Rural Utilities Service or at the FCC if we have better data on where we truly need to target Government assistance. And similarly, States can focus limited State resources for economic assistance, computer adoption and broadband promotion if ample and accurate data is available indicating where such resources should be deployed. This is precisely what has happened in a State that is ironically more known for horsepower than broadband power: Kentucky. ConnectKentucky has been a wildly successful effort and has demonstrated the palpable benefits for mapping broadband for various public policy benefits.

The risks of not developing national data will undermine our goal of achieving a national plan for universal, affordable broadband. This in turn adversely affects consumers in communities across the Nation. The benefits of higher speeds, lower prices and more choices for broadband services include greater economic opportunity, job creation, worker productivity, access to health care and educational resources, promotion of innovation and global competitiveness.

I look forward to this hearing. I thank our witnesses for appearing today. I turn to recognize the gentleman from Kentucky, Mr. Whitfield, who is not a member of this subcommittee, but I know that he wants to welcome one of our witnesses.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Mr. WHITFIELD. Chairman Markey, thank you so much and Ranking Member Upton, I genuinely appreciate the opportunity to be here this morning, and I will say that I was a member of the subcommittee last Congress but not this Congress—they threw me off—but I do appreciate the great work that you all are doing and the leadership that you provide.

I am really excited to be here this morning to have the opportunity to introduce Mr. Brian Mefford from Kentucky, who is the president and CEO of ConnectKentucky, and I am proud of that because ConnectKentucky is an initiative that was created in Kentucky. Brian led that initiative, working with the Governor's Office in Kentucky, and I believe that it can serve as a model for successfully addressing America's broadband initiative. This model was developed in Kentucky by ConnectKentucky, which is a nonprofit public-private partnership dedicated to accelerating broadband deployment and use across the entire State of Kentucky. Its mission is simply to ensure that all Kentucky communities and individuals have broadband access and the ability to complete in the global economy. Guided by that clearly stated mission, ConnectKentucky was able to craft and implement a comprehensive strategy, and as a result of that strategy in Kentucky today, 93 percent of households are connected to the Internet, and by the end of this year 100 percent of Kentucky households will be able to access broadband by the end of the year, and I think that is a remarkable achievement, and it was achieved primarily because of Brian Mefford and his organization and the great leadership that they provided in our State. So Brian, we welcome you today, and I want to thank the committee for allowing me to introduce him, and I know you will look forward to his testimony.

Thank you very much.

Mr. MARKEY. We thank the gentleman from Kentucky for paying us this special guest appearance to introduce our very special guest.

The Chair now recognizes the gentleman from Michigan, Mr. Upton.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman, and I too thank you for having this hearing today regarding the discussion draft of the Broadband Census of America Act of 2007.

Today's hearing builds on the one we held in April on broadband lessons from abroad. Much of the focus of that hearing centered on the fact that OECD's most recent data on broadband deployment was flawed and vastly understated broadband's penetration in the

United States. So I view the thrust of this legislation as an effort to get a better idea of U.S. broadband penetration.

We are extremely fortunate to have such a distinguished panel of experts today, especially since one of our witnesses has direct experience and had great success in implementing a broadband mapping plan at the State level. It isn't often that we have the advantage of looking at a successful model such as ConnectKentucky, which we can learn from and implement in a bipartisan way on a national level, and it would behoove this committee and subcommittee to learn from the outstanding achievements of ConnectKentucky, which demonstrates perfectly how the Government can work with industry in a non-regulatory manner to create a public-private partnership that benefits industry and consumers and provides a catalyst to greater broadband investment. There is no need for us to recreate the wheel.

As I have stated before, I am very supportive of the overall goal of this legislation and believe that the success of ConnectKentucky can be replicated on a nationwide basis, and I look forward to working with you, Mr. Chairman, to achieve that goal. However, I am not sure why we need to amend the definition of high speed in section 706, especially since your proposed change would exclude most wireless services and even some DSL. Since the FCC's 2004 data gathering order, the FCC form 477 has required facilities-based broadband service providers to categorize broadband connections into five categories with transmission speeds ranging from 200 kilobits per second to 100 megabits per second. So let us just require the reporting to reflect that increased granularity. After all, the 200 kbps figure is not a ceiling, and much of the service available today is already well above that. A simple inventory of all the speeds available will make that abundantly clear and help us improve those numbers, as well as promote development in unserved areas. I believe that section 3 of your bill requiring the development of broadband inventory maps will show graphically the unserved and underserved areas. I do question whether NTIA should be the developer of that map. I believe that the mapping should be done by a public-private partnership along the lines of which was done by ConnectKentucky, and I look forward to listening to Mr. Mefford perhaps discuss that in his testimony. The maps on ConnectKentucky's Web site are quite informative, and I believe that grants under section 4 should go to these ConnectKentucky-type public-private partnerships. This model worked very well, and I don't see any reason to divert from a model that has demonstrated such success.

Mr. Chairman, I look forward very much to working with you on the goals of this legislation, and I appreciate again you having the hearing today. I yield back.

Mr. MARKEY. I thank the gentleman from Michigan.

The Chair recognizes the gentleman from Pennsylvania, Mr. Doyle.

OPENING STATEMENT OF HON. MIKE DOYLE, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. DOYLE. Thank you, Mr. Chairman, and thank you for holding this hearing on mapping.

Mr. Chairman, I am reminded of one of my favorite Bazooka bubblegum jokes. Are you ready? Why do maps never win at poker?

Mr. MARKEY. Why do maps never win in poker?

Mr. DOYLE. Because they always fold. All right. That wasn't that bad. Thankfully, that joke was written years ago.

We know maps today, Mr. Chairman, are created digitally and many are available online, and as the subcommittee looks to promote broadband deployment and acceptance across the country, we need to know where it is available, how fast it is and how cheap it is. Maps are older than language itself, and the knowledge they contain has often instigated incredible changes. Dr. John Booth did not know what was causing London's cholera outbreak in the 1850s and so he pinned all the victims on a map. His studies of the pattern of the disease were convincing enough to persuade the local town council to disable the offending well pump, and the cholera was stopped in its tracks, thus creating the field of epidemiology.

Luckily, our goals today are a little more modest than stopping a deadly disease. I just want to know who has access to fast broadband. Even in my urban and suburban district, there are places that don't have broadband competition. I hope with better information we can make better decisions about the Internet, our most critical information infrastructure. That is why I think there is a lot to like about this bill. Technology-neutral legislation that doesn't disadvantage first movers who have faster speeds than others is almost always a good idea. ConnectKentucky is a great model, and maybe the bill needs to be more prescriptive and require that States follow that model. Perhaps the bill should also have a mechanism to revisit the speeds that we define as broadband every so often. Perhaps the legislation should also look at why people aren't buying broadband if it is available to them. Is it the price? Are they happy with dial-up? Is it that they don't have a computer at home or is it that they don't really have any providers in their area? I look forward to the witnesses' testimony on these points and more.

Mr. Chairman, the maps that will be created under this bill might go down in history as some of the most useful information about telecommunications ever collected. Let us make sure that we get the data we need.

With that, I yield back my time.

Mr. MARKEY. The gentleman's time has expired.

The Chair recognizes the gentleman from Illinois, Mr. Shimkus.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Thank you, Mr. Chairman. I do appreciate having this hearing, and to be honest with you, I have already learned a lot in just a few opening statements and some of these comments.

Let me just tell you where I am coming from. I am glad Ed was here but there are parts of my district—where I live in my district,

I drive north to get to Louisville, KY, so I border Kentucky. My district goes down to Paducah, and they do have a very successful program that we have been following, going from 60 percent broadband penetration to 93 percent penetration in 2½ years. That is now attempting to be modeled by a group that is represented by a friend of ours, former Member of Congress Glenn Poshard, who now is involved with Southern Illinois University, and they are doing a Connect SI, a Connect Southern Illinois, and they have kind of mapped out our area of coverage, but there are some questions. The question is what you raised, Mr. Chairman, in your opening statement, at what level, 200? I think ConnectKentucky is 750. You are proposing 2,000. The question is, is a market competitive, what is the standard? There are all these issues that we need to hash out because in rural America, if we set the standard too high, we will disenfranchise the rollout of 750. So if you would work with us as we move this forward, this is an important thing, and I think southern Illinois is trying to meet these demands right now in a market-based competitive approach, and I yield back my time.

Mr. MARKEY. No, of course, my relationship with rural America is those two stuffed cows in front of the Hilltop Steakhouse on Route 1 in my district, so of course I am going to be talking to the gentleman from Illinois and the other Members that represent rural districts.

The Chair recognizes the gentleman from Texas, Mr. Green.

OPENING STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GREEN. Thank you, Mr. Chairman, for holding this hearing on broadband mapping. As we have explored in previous hearings increasing broadband access is critical to our economy, and I want to commend our chairman for proposing legislation addressing the current problems of broadband access and mapping.

Our district in Houston has fair access by national standards but still lags behind other parts of our city. Not only is access a problem, but cost is also a prohibitive factor. I am particularly interested in section 3 of the draft legislation. The FCC is also addressing this in a notice of proposed rulemaking it recently issued seeking comment on section 706, what data it collects. I think it is important that collection of this data is accurate and captures not only number of households passed, but also the number of broadband service providers available to the consumers as well as price. We need competition to drive down the prices, and this would ensure access doesn't just mean we have lines running by our house but everyone can connect to those lines. An important development for Houston and our district is municipal wi-fi. Houston recently approved a deal with the city and EarthLink for a wireless broadband network license agreement and a 5-year service agreement. EarthLink will build and maintain a wireless Internet network, and the project, covering 600 square miles, makes this wi-fi development the largest in North America. The company will provide a discounted rate of $10 per user per month or lower, depending on the competitive wholesale rate, for up to 40,000 low-income users. As wireless technology advances, broadband competi-

tion will not just consist of lines running to the home. This would help districts like mine that I represent by giving them multiple options of technology like WiMAX which could provide a more economical way to offer service in rural districts.

One other issue I hope to hear about from Mr. Mefford today is your No Child Left Offline project. One of the major barriers to bringing broadband into the home isn't just running the lines or the cost of the service but the cost of the equipment, mainly the computer and getting online.

Mr. Chairman, again I thank you for holding the hearing, and I look forward to the testimony.

Mr. MARKEY. The gentleman's time has expired.

The Chair recognizes the gentleman from Oregon, Mr. Walden.

Mr. WALDEN. Thank you, Mr. Chairman. I am going to waive an opening statement. I know we are going to vote here in about 8 minutes.

Mr. MARKEY. They have actually changed that if you——

Mr. WALDEN. Well, I will still waive so we can get to the witnesses. Thank you.

Mr. MARKEY. The gentlelady from New Mexico, Mrs. Wilson.

OPENING STATEMENT OF HON. HEATHER WILSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW MEXICO

Mrs. WILSON. Thank you, Mr. Chairman. Thank you for holding this hearing and for bringing this issue forward. I think this is a really interesting context to provide information to try to get a standard basis for gathering that information to assist communities and States and even the Nation in planning but also to provide information to consumers on what may or may not be available and what it really means.

I think we probably all share a common goal here, although we may not all agree on the strategies to achieve that goal, which is to deploy advanced telecommunications capability to all Americans. The key here are the words "all Americans," not just the high income or the high population density areas but areas like rural New Mexico and low-income neighborhoods and our Nation's largest city, and so I think this idea of going at it through data and transparency and making things available easily to companies who may be interested in going after a market segment or rolling out new technologies and to consumers so that they know what the choices are is a good one. Now, there are going to be some things you need to work on, on how to structure this so we do get real usable information and we don't discourage the rollout of new technologies and we go across all technologies.

I also look forward to hearing this panel today. I believe this is the first time in my memory that we have leaders of associations representing telecom and cable and wireless all here at the same time, and in order for this legislation to work, we have to go across all of the different technologies. So I look forward to hearing the testimony today and the responses to questions. I look forward to working on this piece of legislation.

Thank you, Mr. Chairman.

Mr. MARKEY. The gentlelady's time has expired.

The Chair recognizes the gentleman from Washington State, Mr. Inslee.

OPENING STATEMENT OF HON. JAY INSLEE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. INSLEE. I just left a discussion about Internet radio where a Government agency, at least in many of our views, didn't quite get it right on the copyright issue, and I pointed out how important it is to get it right, and I am really interested in your thoughts on how we get it right on the high-speed definition issue, particularly looking at future technology. We tend to be behind technology here in the Government on occasion, and I would be very interested in your viewpoints about where that right number is looking into the future to the definition of high speed, and I just look forward to this conversation because we have to get that one right.

Thank you very much.

Mr. MARKEY. The gentleman's time has expired.

The Chair recognizes the gentleman from Nebraska, Mr. Terry.

Mr. TERRY. I will waive.

Mr. MARKEY. The Chair recognizes the gentlelady from Tennessee, Mrs. Blackburn.

OPENING STATEMENT OF HON. MARSHA BLACKBURN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TENNESSEE

Mrs. BLACKBURN. Thank you, Mr. Chairman. I appreciate the opportunity to be able to sit in on the hearing today and I want to say welcome to the witnesses, and we do look forward to what you have to say.

My State of Tennessee has recently formed a broadband task force that is going to be modeled on the ConnectKentucky program, so Mr. Mefford, I am looking forward to hearing your comments. I do have some questions about it. I am excited about the opportunities for public-private partnership. I am also interested in what our industry witnesses are going to have to say as they are working with the ISP providers to deploy this and to increase broadband penetration. It is good for our rural communities. It is good for economic development.

I thank the chairman and the ranking member for their attention to the issue, and I yield back.

Mr. MARKEY. The gentlelady's time has expired.

Any other statements for the record will be accepted at this time.

[The prepared statements follow:]

PREPARED STATEMENT OF HON. J. DENNIS HASTERT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Thank you, Mr. Chairman.

I would like to welcome the panel here today, and I look forward to hearing from the witnesses on how we should proceed with broadband mapping.

Let us step back for a moment and ask the basic questions. What is the purpose of mapping out broadband, and what are we trying to achieve? Are we identifying broadband availability to serve those who do not have access? Or are we using broadband mapping as a backdoor attempt to regulate?

I am the first to recognize, having more information is always better than having no information; but what kind of information do we need to achieve our primary goal of serving those who at present do not have access to broadband? We've heard

in previous hearings that cable, phone, wireless and satellite providers are already making large investments in upgrading and deploying broadband. In fact, 100 percent of all AT&T customers in 22 States will have access to high speed Internet by the end of this year.

Congress must look to ConnectKentucky as a model to achieve broadband coverage everywhere.

We must be cautious that our goal to provide broadband to those without access does not lead to an overly regulatory regime. Congress must continue to promote policies that encourage investments in technology and not enact policies that will delay the rollout of broadband to consumers.

Thank you and I yield back my time.

PREPARED STATEMENT OF HON. JOE BARTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Thank you, Chairman Markey, for holding this hearing.

I particularly look forward to the testimony from our ConnectKentucky witness. By all accounts, ConnectKentucky has had remarkable success with broadband mapping. Through its efforts, broadband penetration in Kentucky has increased from 60 percent to 93 percent in just the last 2½ years.

Broadband mapping involves collecting data to identify where broadband is available and then targeting unserved areas for deployment. ConnectKentucky has worked collaboratively with industry through voluntary reporting to build a detailed map of broadband availability. The map has spotlighted untapped markets, leading the providers to deploy additional facilities and serve more people. ConnectKentucky attributes its success to the fact that it is not a Government agency but a non-profit organization funded through State, Federal, and private dollars. It does not regulate and keeps sensitive data confidential through non-disclosure agreements.

The first question is, can the Nation use the ConnectKentucky model? And here are some more questions that need answers: Do we need to define "broadband" as a particular speed or simply take an inventory of the different technologies and speeds that are available? Should the focus be identifying capabilities, such as the ability to send e-mail, browse Web sites, and stream video? Are zip codes the right geographic units to measure? Is there one standard set of data to gather, or should the data vary by the type of technologies that different providers use and the designs of their networks? How do we minimize the data collection burden, and how do we protect sensitive information?

There is no question is that better information is necessary. Indeed, our previous hearing on the data collected by the Organization for Economic Cooperation and Development demonstrated that rankings of countries tend to mislead rather than inform. A more accurate picture of broadband deployment in this country would reverse the inferiority complex many seem to be developing and plot the right course for continued improvement.

I look forward to learning more today about what data we need to collect, how we should collect it, and what we can do with it. I yield back.

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Statement of the Honorable Lois Capps
Subcommittee on Telecommunications and the Internet
Legislative Hearing on a Discussion Draft Addressing
Broadband Mapping and Data Collection

Thank you, Chairman Markey, for holding this legislative hearing on a broadband mapping and data collection bill.

The FCC hasn't updated its definition of broadband – 200 kilobytes a second – since 1999.

Meanwhile, consumers in other countries are getting speeds 250 times faster than that, and in many cases, paying less than Americans do for much slower connections.

It's no wonder that it seems like every time a new international study on broadband comes out, we see the United States slipping farther down the rankings.

We don't have a national broadband strategy, and we don't even have a good place to start, because we don't know who has access to broadband and who doesn't.

I asked FCC Chairman Kevin Martin about the Commission's definition of broadband at this subcommittee's oversight hearing in March.

I also asked him about the outdated way of measuring which areas have broadband access, based on ZIP codes.

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At the NTIA oversight hearing, I asked Assistant Secretary John Kneuer why his agency didn't know which areas of our country don't have broadband.

I also asked him why we don't know how much those Americans lucky enough to have broadband pay for it.

I didn't get satisfactory answers from either Chairman Martin or Assistant Secretary Kneuer.

But I am pleased that this subcommittee is filling the void.

The draft broadband mapping bill that we have before us today would increase the definition of high-speed internet access to a reasonable level, mandate better collection of data and international comparisons, and develop a broadband inventory map of the country.

It's a necessary step in developing a national broadband strategy and climbing back to the top in the international rankings.

I hope that we build on this draft by learning from our witnesses here today, especially Brian Mefford, the President of ConnectKentucky, which has mapped broadband in that state and is on track to make broadband available to every state resident by the end of the year.

I want to commend Chairman Markey for holding this hearing and look forward to hearing from the witnesses.

Thank you.

We now turn to recognize our very distinguished panel. It is one that I think, as the gentlelady from Tennessee mentioned, really covers a full spectrum of perspectives on these issues. Our first witness is Mr. Larry Cohen. Mr. Cohen is the president of the Communications Workers of America. He represents obviously tens of thousands of communications workers all across our country and is one of the most important voices in the communications industry. We welcome you, Mr. Cohen. Whenever you feel comfortable, please begin.

STATEMENT OF LARRY COHEN, PRESIDENT, COMMUNICATIONS WORKERS OF AMERICA

Mr. COHEN. Thank you, Mr. Chairman, it is a pleasure to be here, and also members of the subcommittee. I think the bipartisanship that you addressed is critical to this and we believe at CWA that this is absolutely possible to establish policy in a bipartisan manner.

I am the president of CWA representing 700,000 members, over half of whom work on telecom networks including wired, wireless, cable sectors as well as media workers and others directly affected by this.

The purpose of this hearing, as the Chair has said, is to discuss broadband mapping and data collection. Good data is the foundation of good policy. We desperately need a national Internet policy to reverse the fact that our Nation, the country that invented commercial Internet, has fallen from first to 16th in the world in broadband adoption.

Equally disturbing, Americans pay more for slower connection speeds than people in many other countries, and we have heard the reference to Japan where actually now 80 percent of households now have access to a fiber network with speeds up to 100 megabits with 50 as the standard. In general, the United States is stuck with a 20th-century Internet in the 21st century, and we have heard, too many Americans, especially those in rural areas or low-income households, aren't connected at all.

Unfortunately, we don't even know the full extent of our problems because our data is so poor. We don't know where high-speed networks are deployed, how many households and small businesses connect to the Internet, we don't know at what speeds and we don't know how much they pay. Without this information, we can't craft good policy solutions, and we fall further behind.

The discussion draft of the bill, Broadband Census of America Act, is a good step forward to fill this information void. As we know, the draft bill would require the FCC to upgrade its definition of high speed to not less than 2 megabits download and 1 megabit up, a standard used in many other countries. CWA supports this provision. The FCC has not changed its definition of high speed in 9 years, a lifetime in the Internet. Under the FCC's current definition of 200 kilobits per second in one direction, it takes 17 hours to download a movie.

Mr. Chairman, CWA has a few recommendations to improve this section. First, the FCC, as has just been noted, should be instructed to revise this definition periodically. In fact, there is no good definition. Second, the FCC should continue to collect data at

all speed levels to measure progress over time. Finally, some have suggested establishing a new definition of second-generation broadband pegged to a data rate that would reliably transmit full-motion, high-definition video. This is also worth considering.

CWA also supports language in the draft bill requiring the FCC to collect and evaluate broadband deployment at a much more granular level, down to the ZIP code of nine digits. As the GAO has pointed out, the FCC's current five-digit ZIP code methodology is inadequate in rural areas. A five-digit ZIP code can cover many, many miles. Moreover, the FCC's methodology tells us almost nothing about where infrastructure is deployed.

As a remedy, the draft bill instructs the NTIA to create a detailed broadband map of the Nation. The interactive map would be publicly available on the Web. CWA strongly supports Federal efforts to create a broadband map that is accessible to the public. The map will help show policymakers and the private sector where there are deployment gaps and will measure progress towards national goals. In gathering this data, the privacy of proprietary information must be protected.

The draft bill establishes a program of grants to States and communities for broadband mapping. This section of the bill, as it has been noted, is modeled in part on ConnectKentucky. However, ConnectKentucky went beyond mapping, and ConnectKentucky also facilitated deployment of grassroots technology planning teams in every county in the State, and we will hear more about ConnectKentucky in a minute.

Mr. Chairman, the current language in the draft bill limits the States' grants to broadband mapping. This omits, as I noted, many important pieces of ConnectKentucky. We urge the subcommittee to expand the purpose of the grants to include technical assistance, support for local community teams and support for programs to improve computer ownership and Internet access for unserved and underserved populations.

CWA also supports provisions in the draft bill to require the FCC to survey the price, speed and availability of broadband in urban, rural and suburban areas and among different classes of customers. This information will help policymakers determine whether Internet services are affordable, which communities are left behind and where to target solutions.

Over the past few months, CWA has posted a speed test on our Web site, *www.speedmatters.org*. About 70,000 people have taken the test to check actual download and upload speeds. We don't claim the results are scientific. We do believe this is the first national survey of Internet upload and download speeds. The results are troubling.

As you can see from the chart attached to the back of this testimony, the average download speed was 1.9 megabits per second. At this rate, it takes an hour and a half to download a movie on broadband. The average U.S. download speed compares to 61 megabits, and we have heard about the speeds in the other countries, and upload speeds were only 371 kilobits. The chart shows where we stand. Obviously our goal is to have a policy in this country that compares favorably to every one of these countries. It is not

by accident, it is not just the market. Each one of these countries has a policy.

[The prepared statement of Mr. Cohen follows:]

Testimony of
Larry Cohen
President
Communications Workers of America

Submitted to the
Subcommittee on Telecommunications and the Internet of the
House Energy and Commerce Committee

Hearing on
H.R.____, a Discussion Draft Addressing Broadband Mapping and Data Collection
May 17, 2007

Summary

The United States has fallen to 16th in the world in broadband adoption. Americans pay more for slower connection speeds than people in other countries. Too many Americans, especially those in rural areas or low-income households, aren't connected.

The discussion draft of the Broadband Census of America Act is a good step forward toward filling the gaps in federal broadband data collection so we can craft good policy solutions to ensure that every American home and business has access to affordable, world-class Internet.

CWA supports upgrading the current FCC definition of "high speed" to not less than 2 megabits per second (mbps) download and not less than 1 mbps upload. The definition should evolve as technology improves.

CWA supports requiring the FCC to collect and evaluate broadband deployment data at a more granular level, down to the zip code of 9 digits.

CWA supports federal efforts to create a broadband map of the nation that is accessible to the public, with adequate provisions to protect the privacy of proprietary information.

CWA supports a program of grants to states for broadband mapping. CWA believes the draft bill could be improved by broadening the grant program to include technical assistance to local community teams. The successful Connect Kentucky program that created the first broadband map in the nation facilitated the technology planning teams in the development of broadband plans. As a result, private carriers accelerated build-out of their networks.

CWA supports requiring the FCC to survey broadband price, speed, and availability.

CWA conducted its own Speed Test on its website (www.speedmatters.org). About 70,000 people took the test. The results are troubling. Average download speed was 1.9 megabits per second. This compares to average download speeds of 61 mbps in Japan, 45 mbps in South Korea, 18 mbps in Sweden, 17 mbps in France, and 7 mbps in Canada. Average upload speed was 371 kilobits per second, also far below our international competitors.

Good morning, Mr. Chairman and Members of the House Subcommittee on Telecommunications and the Internet. Thank you for the opportunity to testify today.

I am Larry Cohen, President of the Communications Workers of America. CWA represents more than 700,000 workers employed in telecommunications, the media, public sector, manufacturing, health care, and airlines.

The purpose of this hearing is to discuss broadband mapping and data collection. Good data is the foundation of good policy. We desperately need a national Internet policy to reverse the fact that our nation – the country that invented the Internet – has fallen to 16th in the world in broadband adoption.[1]

Equally disturbing, Americans pay more for slower connection speeds than people in many other countries. In Japan, 80 percent of households can connect to a fiber network at a speed of 100 megabits per second. This is 30 times the average speed of a U.S. cable modem or DSL connection, at roughly the same cost.

The United States is stuck with a 20th century Internet. Too many Americans – especially those in rural areas or low-income households -- aren't connected at all.

Unfortunately, we don't know the full extent of our problem because our data is so poor. We don't know where high-speed networks are deployed, how many households and small

[1] International Telecommunications Union, 2006.

businesses connect to the Internet, at what speed, and how much they pay. Without this information, we can't craft good policy solutions. So we continue to fall farther behind.

The Discussion draft of the Broadband Census of America Act is a good step forward to fill this information void.

The draft bill would require the FCC to upgrade its definition of "high speed" to not less than 2 megabits per second download and not less than 1 megabit per second upload, a standard used in many other countries. CWA supports this provision. The FCC hasn't changed its definition of high-speed in nine years, a lifetime in the Internet. Under the FCC's current definition of 200 kilobits per second in one direction, it would take 17 hours to download a movie.

Mr. Chairman, CWA has a few recommendations to improve this section. First, the FCC should be instructed to revise the definition periodically as technology evolves. Second, the FCC should continue to collect data at all speed levels to measure progress over time. Finally, some have suggested establishing a new definition of second generation broadband pegged to a data rate that would reliably transmit full-motion, high-definition video. This is worth considering.

CWA also supports language in the draft bill requiring the FCC to collect and evaluate broadband deployment data at a much more granular level, down to the zip code of 9 digits. As the GAO has pointed out, the FCC's current 5-digit zip code methodology is woefully

inadequate. In rural areas, a 5-digit zip code can cover many miles. Moreover, the FCC's methodology tells us almost nothing about where infrastructure is deployed.

As a remedy, the draft bill instructs the National Telecommunications and Information Administration to create a detailed broadband map of the nation. The interactive map would be publicly available on the Web. CWA strongly supports federal efforts to create a broadband map that is accessible to the public. The map will help show policymakers and the private sector where there are deployment gaps, and will measure progress toward national goals. In gathering this data, the privacy of proprietary information must be protected.

The draft bill establishes a program of grants to states and communities for broadband mapping. This section of the bill appears to be modeled, in part, on the successful Connect Kentucky program which developed the first broadband map of any state in the nation.

However, the ConnectKentucky program went far beyond broadband mapping. Connect Kentucky facilitated the development of grassroots technology planning teams in every county in the state. These e-technology teams, composed of business, schools, libraries, health care, higher education, local government, labor, and other community-based organizations, developed local technology plans to demonstrate market demand for high-speed Internet services. As a result, private providers found it economic to build-out their broadband networks. For example, BellSouth, the largest provider in the state, accelerated its DSL deployment, and broadband subscription went up 17 percentage points. The investment created good jobs for telecommunications employees.

Mr. Chairman, the current language in the draft bill limits the state grants to broadband mapping. This omits an important piece of the Connect Kentucky program. CWA strongly urges the Subcommittee to expand the purpose of the grants to include technical assistance and support to local community teams, and support for programs to improve computer ownership and Internet access for unserved and underserved populations.

CWA also supports provisions in the draft bill to require the FCC to survey the price, speed, and availability of broadband services in urban, rural, and suburban areas and among different classes of customers. This information will help policymakers determine whether Internet services are affordable, which communities are being left behind, and where to target policy solutions.

Over the past few months, CWA has posted a speed test on our website (http://www.speedmatters.org). About 70,000 people across the country have taken the test to check the actual download and upload speeds of their Internet connection. While we don't claim that the results are scientific, we do believe this is the first national survey of Internet upload and download speeds. The results are deeply troubling.

As you can see from the chart, the average download speed was 1.9 megabits per second. At this rate, it would take an hour and a half to download a movie. This average U.S. download speed compares to 61 megabits per second in Japan, 45 megabits per second in South Korea, 18

megabits per second in Sweden, 17 megabits per second in France, and 7 megabits per second in Canada.[2]

The average upload speed was only 371 kilobits per second, not nearly enough to send quality medical information over the Internet. This, too, pales in comparison to our international competitors. (A copy of average speeds in each state is attached to my testimony.)

I should point out that most people who took our speed test use either DSL or a cable modem. Very few people with dial-up took the test because it took too long.[3] So, the results of our speed test are biased and measure only what we in the U.S. call "high speed."

Mr. Chairman, Speed Matters on the Internet. It determines what is possible; whether we will have the 21st century networks we need to grow jobs and our economy, and whether we will be able to support innovations in telemedicine, education, public safety, and public services to improve our lives and communities. High speed Internet could even help address the global warming crisis by allowing people to get things done without getting into their car.

It's long past time to adopt policies to ensure that every American home and business has access to affordable, world-class Internet services. Good data collection is the first step to get us there.

Thank you.

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[2] Information Technology and Innovation Foundation, "Assessing Broadband in America," April 2007.
[3] 40 percent of Internet users use dial-up. Pew Internet & American Life, "Home Broadband Adoption: 2006."

CWA SpeedMatters.org Speed Test Results
Average Speed in kilobits per second (kbps)

State	Number of Tests	Average Download Speed (kbps)	Average Upload Speed (kbps)
UNITED STATES	**67,401**	**1973 kbps**	**371 kbps**
ALASKA	142	545	206
ALABAMA	697	1,777	306
ARKANSAS	437	1,326	321
ARIZONA	1,741	1,635	557
CALIFORNIA	7,761	1,520	362
COLORADO	1,215	1,354	489
CONNECTICUT	698	2,244	370
DC	581	1,372	724
DELAWARE	207	2,657	365
FLORIDA	3,255	2,368	368
GEORGIA	1,627	2,714	347
GUAM	2	39	236
HAWAII	178	1,965	365
IOWA	619	1,262	489
IDAHO	251	1,323	367
ILLINOIS	2,168	2,184	365
INDIANA	1,507	1,955	434
KANSAS	894	4,167	470
KENTUCKY	990	1,607	363
LOUISIANA	738	2,751	378
MASSACHUSETTS	1,321	3,004	369
MARYLAND	1,309	2,589	381
MAINE	306	1,534	368
MICHIGAN	2,362	2,042	364
MINNESOTA	1,022	1,771	376
MISSOURI	1,719	1,432	327
MISSISSIPPI	240	1,620	324
MONTANA	168	1,312	389
NORTH CAROLINA	1,233	2,225	365
NORTH DAKOTA	114	1,308	458
NEBRASKA	358	1,994	491
NEW HAMPSHIRE	435	2,700	368
NEW JERSEY	1,921	3,680	670
NEW MEXICO	500	1,716	429
NEVADA	559	1,617	436
NEW YORK	5,803	3,436	652
OHIO	3,104	1,359	368
OKLAHOMA	776	1,689	433
OREGON	1,058	2,390	436
PENNSYLVANIA	3,186	1,567	362
PUERTO RICO	48	261	125
RHODE ISLAND	145	5,011	1,739
SOUTH CAROLINA	502	2,338	332
SOUTH DAKOTA	107	825	245
TENNESSEE	1,036	2,035	359
TEXAS	4,056	1,509	369
UTAH	359	1,323	499
VIRGINIA	1,498	2,394	560
VIRGIN ISLANDS	3	767	358
VERMONT	180	2,005	366
WASHINGTON	1,728	2,176	362
WISCONSIN	1,466	1,551	326
WEST VIRGINIA	379	1,117	288
WYOMING	212	1,246	485
UNKNOWN LOCATION	2,463	1,482	387

Most participants had DSL or cable modem connections.

To take the Speed Test, go to http://www.speedmatters.org

5/15/2007

Mr. MARKEY. Thank you, Mr. Cohen, very much. I think you are going to have plenty of attention once we get to the question-and-answer period. Thank you.

Our next witness, Mr. Ben Scott, is the policy director for Free Press. He testifies today on behalf of Free Press, the Consumers Union and the Consumer Federation of America. Welcome, sir.

STATEMENT OF BEN SCOTT, POLICY DIRECTOR, FREE PRESS

Mr. SCOTT. Thank you, Mr. Chairman, members of the committee. Thank you for the opportunity to testify today. Together with other national consumer organizations, we have been studying deployment of broadband for years.

We have always been limited by the FCC's inadequate data. In our view, the Commission has failed to fulfill its obligation under section 706 of the Telecommunications Act to monitor the deployment of broadband appropriately. We cannot evaluate problems that we don't measure or study, much less can we solve them. So it is with great relief that we see the committee considering a data-gathering bill. We don't have any time to lose. Even with the current data, as Mr. Cohen points out, we can see that the U.S. broadband market has significant problems in the three metrics that matter most: broadband availability, broadband speed and the value of broadband products to consumers.

For starters, roughly 10 percent of American households still lack a terrestrial broadband connection. We pay more for a lot less bandwidth than our global competitors, and our markets lack the competition that has led to high broadband subscription overseas. The OECD ranks us 15th out of its 30 member nations. Our growth rate relative to the OECD nations between 2005 and 2006 ranks us a humbling 20th. We can quibble with the details of international comparisons, but the general trend lines are not in error. Every couple of percentage points that we fall behind represents billions of dollars in consumer surplus that we leave on the table each year. We have a problem, so what is the problem? That is often hard to say. We can see the big picture outlines, but we don't have the detailed information necessary to draft the most effective solution.

With the indulgence of Mr. Dingell, Mr. Upton and Mr. Stupak, I would like to use the State of Michigan as a case study to show you what I mean in real terms. If you look at the end of my testimony, you will find charts with all this information for every State in case you are curious about yours. Using FCC and census data, we know that the State of Michigan currently ranks 36th out of 50 in household broadband penetration rates. We know that since 2002 the State ranks just 42d in the level of growth. Now, it is tempting to blame this on big rural areas, but only 25 percent of Michigan's population is rural, which is not far off the national average. We can see one very telling problem, which is that just 66 percent of telephone lines in the State are capable of providing DSL service. On the cable side, I am sure this will do Mr. McSlarrow's heart good, the cable lines are 98 percent broadband capable at the end of 2005. However, over the last 6 months the FCC's data shows that declining to 92 percent. The reasons are unclear. This matches another troubling trend in Michigan, which is

that the overall broadband penetration shows a declining growth rate in contrast to other States.

So what is going on here? What accounts for Michigan's broadband problems, and how should they be addressed? The fact is, we don't know, neither does the FCC, neither does any Federal agency. We don't have enough information to translate this State-level information into the local assessment that we need for solutions. We can implement backdoor-level policies, but we can't tackle the pressing local problems.

So how do we start doing that? Well, we need detailed information at the ZIP code and ZIP+4 level. We need to know the price of speed of connections in different neighborhoods, towns and cities. We need to know local penetration rates. We need to compare different size towns and different towns that are the same size but with different providers. We need to know if broadband is simply unavailable or whether it is too expensive. We need to know how and why competition isn't working. Without this information, it is hard to target policies. If we treat the whole State alike, we are likely to only be partially right. So should we pour money into universal service programs without any data to properly direct it? Should we favor tax incentives for carriers without measuring past performance? Should we design technology training programs without knowing where to start them? We would be much better off if we measured the problems that we are going to solve.

The bill under discussion would represent a very great leap forward in our knowledge about broadband markets and in my view would inevitably improve broadband policies. We strongly support all the tools it creates, but we would like to offer a couple of additional ideas. We recommend an evolving standard for high speed and broadband, as has been mentioned by other members and by Mr. Cohen, but we also recommend that the FCC collect data not just if you have one subscriber in a ZIP+4 but how many lines in a ZIP+4 are capable of providing broadband and of those lines, how many have a subscriber at the end of them. This information would revolutionize our understanding of local broadband markets and usher in the focused policies that bring us what we all want, investment and competition and the social programs necessary to increase broadband's adoption. Adoption is the goal of availability. I think that needs to be clarified.

For consumers, the situation is clear. Since better broadband data means better broadband policies, we should move this bill with all deliberate speed. We look forward to working with the committee.

I thank you for your time and attention, and I look forward to your questions.

[The statement of Mr. Scott follows:]

Testimony of

Ben Scott
Policy Director
Free Press

on behalf of

Free Press
Consumers Union
Consumer Federation of America

before the

U.S. House of Representatives
Subcommittee on Telecommunications and the Internet of the
Committee on Energy and Commerce

Regarding

A Legislative Hearing on H.R. _____, a Discussion Draft Addressing Broadband Mapping and Data Collection
May 17, 2007

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SUMMARY

Free Press, Consumers Union, and Consumer Federation of America appreciate the opportunity to testify on the discussion draft of a bill to improve the quality of broadband data collection. As consumer advocates, we strongly support policies that will bring more broadband competition to American households. Building a solid base of knowledge on which to make competition policy is an important step that should enjoy broad support. The current broadband problems we face are severe and the consequences of resting on the status quo unacceptable.

We recommend this Committee move forward with the bill under consideration, with some modifications, in order to swiftly improve the available data on U.S. broadband performance. We must have this information in order to understand, confront and remedy the problems in the current broadband market. The Federal Communications Commission's (FCC) efforts up to this point to provide Congress with adequate data on broadband deployment have been completely unsatisfactory. Change is imperative.

With current data -- inadequate though it may be -- we can see that the U.S. broadband market has significant failures in the three metrics that matter most: availability, speed and value (cost per unit of speed). Despite years of rhetoric promoting universal availability, roughly 10 percent of American households still lack a terrestrial broadband provider. We pay more for a lot less bandwidth than our global competitors. We do not have a competitive market that is pushing speeds up and prices down at a rate sufficient to raise our stature relative to the rest of the world. In a study released last month by the Organisation for Economic Co-operation and Development (OECD), the U.S. has dropped from 12th to 15th among the 30 member nations in the last six months. Our growth rate relative to the OECD nations between the 2005 and 2006 ranks us 20th.

To determine which policies may best solve these problems, we need better information about what is going on in our neighborhoods, towns and cities. Current data shows us the big picture problems; but it is insufficient to reveal the situation at the local level and guide solutions. With the collection of better broadband market data gathered under the terms of this bill, we can:

- Evaluate the true state of broadband availability and adoption -- by technology, speed and price -- at the local level;
- Evaluate not only the absence of broadband or a low penetration rate, but also understand the reasons why, and the policies most likely to remedy the problems;
- Target direct investment in broadband where it is most needed;
- Enhance competition where it is failing to discipline prices and improve quality;
- Create programs to bring equipment and technology training to local communities;
- Assess and reverse the long-term trends which show us falling behind the rest of the world.

We recommend that the Committee implement all of the tools proposed in this draft bill. We also suggest a variety of additional measures including: establishing an evolving standard for "high-speed" Internet access; establishing a true measure of broadband deployment and adoption to replace the FCC's inadequate system; expanding our inquiry into infrastructure costs and Internet traffic. For consumers, the situation is clear. If we can speed the implementation of new technologies, faster speeds and lower prices by gathering the data needed for good public policy, we should move forward with all deliberate speed. We look forward to working with the Committee on this important legislation.

Assessing U.S. Broadband Markets

For years, the Congress has grappled with the policy challenges of bringing universal, affordable access to high-speed Internet services and increasing U.S. household broadband penetration rates. The results have been unambiguous and unflattering. A significant number of American households -- around 10 percent -- have no available terrestrial broadband service.[1] A much larger percentage -- over 40 percent -- have service available to them, but they do not subscribe, foregoing the social and economic benefits of connectivity because of high prices, a lack of equipment and training, or simple disinterest.[2] Rural areas lag behind urban areas in broadband access. The poorest among us are the least likely to gain access to the technologies that could lead to social mobility. The cost to our economy and the quality of life in our society mounts each successive year that these problems go unsolved. Meanwhile, alarmingly, the U.S. is falling behind the rest of the world in broadband penetration and market performance, ceding the tremendous benefits of leading the world in network connectivity to others.

How do we begin to address the broadband problem? Our first task is to understand exactly what is happening in the marketplace. We need to know precisely where broadband is being offered and where it is not. We need to know how much competition is in each local market. We need a clear understanding of the prices and speeds available to American broadband consumers, no matter where they live. We need to know how many Americans are subscribing, how many are not; and if possible, we need to know why they do or do not subscribe. In short, we need data. Sadly, the Federal Communications Commission (FCC) has failed to provide good data for Congress to evaluate in making broadband policy.

The Discussion Draft before the Committee is therefore both timely and critical as a first step toward a national broadband policy that actually works for American consumers. The problems that it will solve have been well documented and urgently need attention. This testimony will provide a summary of the current problems with FCC's broadband data; an evaluation of the urgent problems in the broadband market; and specific commentary and recommendations on the Discussion Draft. Our central conclusion is that this bill should move forward, taking into consideration an evolving standard of "high-speed" access and incorporating a metric into the FCC's data-gathering methodology that is a true measure of deployment and penetration levels.

Broadband Data Problems

The FCC measures broadband deployment under the direction of the Telecommunications Act of 1996. But the information gathered on a ZIP code basis is flawed and incomplete.

- The FCC counts a ZIP code as covered by broadband service if it contains at least *one* broadband subscriber. Because ZIP codes are often large geographic areas, and service providers often cover only small fractions of that area, this measure is often highly inaccurate. We must have more granular data points to assess broadband deployment. The Government

[1] "Broadband Deployment is Extensive throughout the United States, but it is Difficult to Assess the Extent of Deployment Gaps in Rural Areas," Government Accountability Office, Report to Congressional Committees, GAO-06-426, May 2006.

[2] Extrapolated from "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.; calculated assuming one line per household, based on July 1 2006 Census household estimates; S. Derek Turner, "Broadband Reality Check II," Free Press, Consumers Union, and Consumer Federation of America, August 2006, Available at http://www.freepress.net/docs/bbrc2-final.pdf

Accountability Office (GAO) reviewed the FCC's methods and offered a thorough critique, showing glaring inaccuracies.[3] It is highly likely that many households in ZIP codes registered by the FCC as "covered" by broadband do not have a wireline broadband provider. Tellingly, the GAO notes that the FCC never intended the ZIP code method to be used as a measurement of broadband deployment. In fact, the FCC has never implemented a measurement system to accomplish that task.

- The FCC gives no consideration to the price, speed or availability of connections across the ZIP code. It is not enough simply to count the number of broadband providers that register at least one subscriber in a given ZIP code. We need to know where broadband is available in a ZIP code, what percentage of households are subscribing, and what price they are paying for what speeds. Without this information, we cannot precisely locate the gaps in broadband coverage, the disparities in price and service quality, and the remedies suggested by the patterns in the data.

- The standard the FCC uses to measure "high-speed" connections is misleading and low. The Telecommunications Act of 1996 mandates the FCC to ensure deployment of broadband "that enables users to originate and receive high-quality voice, data, graphics and video telecommunications." However, the standard used by the FCC to measure "high-speed" connections (200 kbps) is barely enough for users to *receive* low-quality streaming video. It is certainly insufficient for users to *originate* high-quality video.

- Because the FCC sets the standard for "high-speed" connections so low and fails to distinguish between business and residential service in counting coverage, the Commission dramatically overstates the number of providers offering service to a given household. The FCC counts satellite and mobile wireless broadband products in the same category with DSL and cable modems. These services are not in the same product market on either price or speed. GAO reports that FCC data shows that the median number of providers available to a household is 8. GAO puts that number at 2.[4] This is an unacceptable margin of error.

The FCC lacks the tools to even begin making good broadband policy. The GAO study from May of 2006 recommended that the FCC offer new ideas to this Committee for the collection of broadband data that would better reflect the actual level of deployment and penetration in the U.S. To our knowledge, this has not occurred. Despite repeated studies decrying the poor quality of FCC data collection[5], the FCC has just this month launched a Notice of Proposed Rulemaking (NPRM) into the matter.[6]

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[3] GAO, Op cit, "While FCC states that its zip-code information is not meant to be a measure of broadband deployment, some parties have used it in this manner because there are no other official data on deployment of broadband across the country."

[4] *Ibid.*

[5] S. Derek Turner, "Broadband Reality Check," Free Press, Consumers Union, and Consumer Federation of America, August 2005, Available at http://www.freepress.net/docs/broadband_report.pdf; S. Derek Turner, "Broadband Reality Check II," Free Press, Consumers Union, and Consumer Federation of America, August 2006, Available at http://www.freepress.net/docs/bbrc2-final.pdf; Communications Workers of America, "Speed Matters," October 3, 2006, Available at http://files.cwa-union.org/speedmatters/SpeedMattersCWAPositionPaper.pdf.

[6] Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership), Notice of Proposed Rule Making, WC Docket No. 07-38, April 16, 2007, Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-17A1.pdf

Broadband Market in Crisis

The need for a change in broadband policy is facing a state of urgency. The President called for the U.S. to reach the universal broadband milestone by this year. There is now little chance we can achieve that result. While it is true that the total number of broadband lines deployed in the U.S. is rising and the total number of broadband users is now near 40 percent of the country, the U.S. growth rate in broadband penetration compared to other nations is not encouraging. Our growth rate between 2005 and 2006 earned us the 20th spot out of 30 OECD nations.[7] Countries like Belgium and South Korea -- whose markets had appeared to level off at a saturation point of broadband users -- have seen new surges in subscribership and gained more ground on the U.S.[8] Simply put, other nations are surpassing us. Though some have scrutinized the data from these studies to find some qualifications to ease our wounded pride, the trend lines are not in error. [See Appendix B for a discussion of issues surrounding the OECD data.]

The broadband problem is most commonly assessed through raw headcounts of households that have access to high-speed Internet service, what services are available, and how many consumers subscribe to those services. Though the data suffers from the problems noted above, the statistics we have are valuable insofar as they give us a general picture of competition in the marketplace and consumer behavior. According to the best available data:

- **Extrapolating from FCC data, nearly 60 percent of U.S. homes are not broadband adopters.**[9]
- **The rate of residential broadband adoption continues to slow.** From June 2005 to June 2006 the number of residential advance service lines increased 34 percent. But from June 2004 to June 2005 the increase was 62 percent.[10]
- **37 percent of ZIP codes have one or less cable and/or DSL provider.**[11] Given that FCC data overstates the level of broadband deployment; this should be viewed as a conservative figure.
- **Some states have large gaps in coverage.** Over 40 percent of South Dakota households are not wired for cable broadband. Over 40 percent of New Hampshire and Vermont households are not wired for DSL.[12] [See Appendix C for full statistics.]
- **The broadband market remains a duopoly.** 96 percent of residential advanced services lines are either cable or DSL.[13]
- **There are no viable 3rd "pipe" competitors.**

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[7] Organization for Economic Cooperation and Development (OECD), "OECD Broadband Statistics to December 2006," April 23, 2006, Available at http://www.oecd.org/sti/ict/broadband

[8] *Ibid.*

[9] "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.; calculated assuming one line per household, based on July 1 2006 Census household estimates.

[10] *Ibid.*

[11] *Ibid.*

[12] *Ibid.*

[13] *Ibid.*

- From June 2005 to June 2006 there were only 637 new broadband over powerline (BPL) connections added, bringing the total to just over 5000 nationwide, or 0.008 percent of all U.S. broadband connections.[14]
- From December 2005 to June 2006 the number of advanced service, satellite broadband connections DECREASED by 40 percent.[15]
- Mobile wireless broadband from cellular carriers enjoyed a rapid growth rate in the last year. However, these connections remain slow and costly compared to wireline alternatives. They are not substitutable competitors with DSL and cable modems, but rather form a complementary market dominated by vertically integrated firms with little incentive to cannibalize wireline market share. (See Appendix A for analysis).

This record of performance has not positioned us well in the race for global competitiveness -- with all of the economic and social benefits at stake. According to the OECD, the U.S. is 15th among the 30 member nations in broadband penetration, lagging behind the acknowledged world leaders -- the Netherlands and South Korea -- but also Canada and all of Scandinavia.[16] The International Telecommunications Union's (ITU), evaluating a larger number of countries than the OECD, places the U.S. at 16th.[17] A separate ITU study measuring a variety of factors in the Digital Opportunity Index, places the U.S. at 21st.[18] This is a particularly valuable analysis because it explores eleven different variables of technology development to assess each country in the study including the proportion of households with telephones, mobile telephones, computers and Internet access; the rates of connectivity to the communications infrastructure; and the cost of connectivity relative to per capita income.

It is critical to recognize that our evaluation of the broadband market's health must not end with a calculation of the available services, platform market share and subscribership. There are three key metrics for understanding the broadband problem: availability, speed and value (cost per unit of speed). In crafting a national broadband policy, we must recognize that true marketplace competition is the touchstone that yields marked improvements in all three metrics. Though the sizeable service gaps that leave rural America without a viable broadband connection are a huge problem, this is likely the easiest issue to resolve. Far more challenging are the starkly unfavorable comparisons in speed and value which separate us from the world leaders in broadband. The data-points below suggest that we have a long way to go to catch up with the rest of the world, even if we manage to reach the goal of universal availability.[19]

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[14] *Ibid.*
[15] *Ibid.*
[16] Organization for Economic Cooperation and Development (OECD), "OECD Broadband Statistics to December 2006," April 23, 2006, Available at http://www.oecd.org/sti/ict/broadband
[17] International Telecommunication Union, "Economies by broadband penetration, 2005," available at http://www.itu.int/ITU-D/ict/statistics/at_glance/top20_broad_2005.html
[18] International Telecommunications Union, "World Information Society Report 2006," available at, http://www.itu.int/osg/spu/publications/worldinformationsociety/2006/wisr-web.pdf
[19] For a detailed background on product availability in Europe, see: Ofcom, The International Communications Market 2006, http://www.ofcom.org.uk/research/cm/cm06/main.pdf

- According to Takashi Ebihara, senior director of the corporate strategy department at NTT East Corp, Americans pay 7 times as much on a cost-per-megabit basis for bandwidth compared to the Japanese -- $.70 versus $4.90.[20]
- A 50 megabit per second (mbps) connection in Japan costs $30 per month. Such speeds are not even available in the U.S. American customers can expect to pay $20 to $30 per month for (at best) 3 mbps of DSL connectivity or between $40 and $50 per month for 4 to 8 mbps of cable modem connectivity. Not only do American consumers settle for less, we often pay more for it.[21]
- A French company offers the "triple play" -- 50 mbps of symmetrical broadband service, unlimited telephony and cable television -- for 30 euros per month. Neither this level of service nor this price-point is available in the U.S. by a wide margin.[22]
- The proportion of slow connections is on the rise. In December 2005, 15 percent of broadband lines had upload speeds slower than 200 kbps. By June 2006 this had increased to 22 percent of lines. The proportion of DSL lines that had upload speeds slower than 200 kbps increased over the December 2006 to June 2006 time period from 18.4 percent and 18.9 percent.[23]
- Over half of all broadband connections in the U.S. are slower than 2.5 mbps.[24]
- Prices aren't dropping. Pew data[25] showed a year-to-year increase for cable, and a slight decrease for DSL -- but the bulk of that is due to low-intro slow-speed teaser rates. Yes, broadband speeds are slowly increasing, but we would expect a competitive broadband market to yield *both* quality increases and price cuts.

The consequences of lagging performance are severe. This isn't just a matter of pride at stake. This is real money. In 2003, when residential broadband penetration was at 20 percent, economists estimated the annual consumer surplus from broadband to be about $10 billion per year.[26] If broadband penetration were 50 percent of all U.S. homes, consumers would realize a $38 billion annual surplus. If household broadband penetration were at 95 percent, the consumer surplus would be $350 billion annually. Because of network effects, the *benefits of higher broadband penetration accumulate exponentially*, thus even a minor increase in our international broadband ranking has tremendous positive impact on the American economy. While we aren't capturing these dollars, someone else is.

All of these alarming facts point to the need for better information to reverse our course as quickly as possible. The critical first step must be to understand the problem as well as we can. To do that, we need to have good data. We do not have any national information about price or speed, and the

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[20] Grant Gross, "U.S. customers pay considerably more than the Japanese for bandwidth," IDG, 4 April 2007, http://www.infoworld.com/archives/emailPrint.jsp?R=printThis&A=/article/07/04/04/HNiapbroadband_1.html
[21] *Ibid.*
[22] "Neuf Offers 50 Mbps in Paris for 30 EUR per month," *MuniWireless*, 7 March 2007, http://www.muniwireless.com/article/articleview/5771/1/2/
[23] "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.
[24] *Ibid.*
[25] John B. Horrigan, "Home Broadband Adoption 2006," Pew Internet & American Life Project, May 28, 2006.
[26] Crandall et. al., "The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy," Criterion Economics, L.L.C., September 2003.

statistics we have concerning availability and penetration are flawed. Rectifying this situation is the first order of business, and we are pleased to see this Discussion Draft on the table.

Analysis of the Discussion Draft

The Discussion Draft is an excellent point of departure for addressing our broadband data problems. This bill offers a variety of tools to begin analyzing our broadband markets by:

1. Revising upward the definition of "high-speed" Internet service to a more realistic level of 2 mbps download speed and 1 mbps upload speed.

2. Altering the FCC's reporting requirement for carriers to provide deployment data down to the ZIP+4 level to uncover micro-gaps in service availability.

3. Conducting an inquiry into the deployment, speed and price of broadband services internationally so that we have our own data sets to evaluate beyond OECD and ITU studies.

4. Producing a map through the NTIA showing which providers offer broadband service at the ZIP+4 level, using what type of technology -- and making that map available to the public.

5. Authorizing grants to state and local governments to conduct studies of broadband availability.

6. Initiating surveys at the FCC of broadband availability, price, actual speed and type of technology in different market areas -- and making that information available to the public.

The value of this information to analysts and researchers is hard to overstate. There is no doubt about its value to policymakers, industry analysts, marketers and consumers alike. It addresses several of the key data problems that have plagued us for years. With this bill, we will finally have information at the granular level about broadband availability, measured to a reasonable standard about what consumers consider to be "high-speed". We will finally have statistically generalizable data on price and actual speed. Consumers will be able to look at a map and identify which broadband providers offer service in their neighborhoods. Local and state governments will be empowered to work with community leaders, organizations and businesses to identify pent-up demand for broadband access, and provide families with the tools needed to make it worthwhile.

Concretely, what will this bill allow us to do that we could not do before? Let's take a real world example. Using FCC and Census data, we know that the state of Michigan currently ranks 36th among the 50 states in household broadband penetration with 31.7 percent of homes subscribing in 2006. We know that Michigan has improved from 11.3 percent penetration in 2002; and we know that this level of growth ranks the state 42nd. We know that in June of 2006, 66.4 percent of ILEC telephone lines in the state were capable of providing DSL service. We know that 73.3 percent of these lines are owned by a RBOC, and we know that 25 percent of the population lives in a rural area. We know that in June of 2006, 91.7 percent of cable lines were capable of cable modem service in Michigan -- a *decrease* from the year before when that number was over 98 percent. [See Appendix C for a full state-by-state data set.] We can also see that the trend lines for broadband in Michigan show a decline in growth. [See Appendix D] Why is this happening? What accounts for

Michigan's problems in performance and adoption? How do we interpret the data that we have? The fact is that we lack the relevant information to answer these questions appropriately.

We would all like to see Michigan -- and all of our other states -- perform better. Where do we start? We can see that there are problems to solve in Michigan, but we cannot see the best path towards a solution. We do not have detailed information about what is happening in Michigan broadband markets beneath the aggregate state-level data. We do not know the price and speed of lines in different towns and cities. We do not know where the penetration rates are high and where they are low. We do not have the ability to compare different locations with similar characteristics in population or income. We do not know the number of lines available in a given area; nor do we have any strong evidence on which to base suppositions about why subscription rates are low or high. We cannot tell if broadband is expensive in a market with low adoption rates. We cannot tell where competition is insufficient to serve consumers. We cannot tell what accounts for the worrying developments in Michigan compared to the rest of the country. It is hard to pinpoint the correct method of policy intervention to help solve Michigan's broadband problems.

Should we pour money into a universal service program for rural broadband providers without any data on how to properly target it? Should we put in place a tax incentive for large carriers without knowing which areas have performed well and which haven't? Where should we target competition policy if we cannot tell where competition exists and where it does not? Can we really assess the health of a given broadband market in Michigan without knowing the price and speed of the average connection in different parts of the state? Is there information we could glean from local and state officials that would be useful?

With this bill we could begin to answer all of these questions and address the policy needs of Michigan. We could identify which areas -- down to the ZIP+4 level -- are falling behind. We could analyze each local market with low subscription rates and assess whether price, speed, competition or type of technology appear to play a role. We could map access across the state so that consumers are aware which types of service are available to them, and how many providers serve their communities. We could compare high performance towns with those that are struggling -- allowing us to identify divergent characteristics and address them. We could locate completely unserved areas and target direct investment. We could work with local governments to tailor social programs such as technology training and low-cost access to personal computers to bring families over the digital divide. We could compare the performance of different service providers across the state on price, speed and penetration rate. We could even begin to map demographic data onto our broadband markets to address the specific needs of our communities. Over time, using data and well-informed policy initiatives, we could develop best-practice models to bring us closer to our goal of universal, affordable broadband access and adoption.

This bill would represent a leap forward in our knowledge about broadband markets and the adeptness with which we can make broadband policy. For these reasons, we strongly support the creation of all the tools proposed in the draft and endorse the spirit of the bill. However, we do see some room for improvement. We offer below a number of recommendations for consideration as this bill moves toward its final form.

Recommendations for the Discussion Draft

We strongly support the revision of the FCC's definition of "high-speed" service upward from 200 kbps. It is appropriate to categorize different types of lines by the speeds of upload and download, but the Commission should continue to capture information about all lines that are faster than dial-up speeds. This will ensure continuity in the data set so that we can measure different kinds of broadband products over time.

We recommend that the Committee consider language requiring the FCC to review the definition of "high-speed" on an ongoing basis so that it is an evolving standard that matches the state of the market. If we aspire to regain our perch atop the world's leading broadband nations, we must continuously set the bar higher. We also suggest that in the future, the definition of "high-speed" service be adjusted to require symmetrical download and upload speeds. The promise of broadband lies in its ability to facilitate two-way communications, not just one-way broadcasting.

We recommend that the Committee consider carefully whether or not the FCC is addressing the directive from Congress in Section 706 of the Telecommunications Act. Section 706(b) states that the FCC should "determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion." This language is fulfilled by the FCC's periodical section 706 reports, which are based primarily on the semi-annual Form 477 reporting. Form 477 gathers info on the total number of high-speed and advanced service lines -- tabulated by technology, by customer type (residential or business), and by state. Form 477 also reports the number of providers in a given ZIP code that declare at least a single customer. Thus the current FCC ZIP code data is *not* a metric of deployment. Indeed, the FCC conceded this point in the original 477 Order. The ZIP code methodology was not meant to be a metric of deployment. Currently, there is no other direct metric for the FCC to use to assess deployment at any level of granularity. We simply do not know how many broadband capable lines have been deployed beneath the state-level data.

The Discussion Draft expands the metrics for the inquiry directed by 706(b), but it does not specifically remedy the FCC's failure to produce an actual metric of deployment. The move from ZIP code to ZIP+4 is an important innovation, which will allow the FCC to uncover micro-gaps in broadband availability that were invisible before. However, this will not tell us how many lines in each ZIP+4 are broadband capable; nor will it measure ZIP+4 areas where broadband has been deployed but there are no subscribers. It also fails to give us a direct metric of subscribership (penetration), because the number of subscribers in a given ZIP or ZIP+4 area will remain unknown.

We recommend that the Committee consider amending its changes to Form 477 to include not only the ZIP+4 data (i.e. the number of providers with at least one subscriber in a ZIP+4), but also the number of lines that are broadband capable in that ZIP+4 and the number of households that have subscribed. This information would revolutionize our understanding of local broadband markets and permit highly focused policies to bring investment, competition and social programs to increase broadband adoption.

We recommend that the Committee also initiate studies of cost and feasibility of broadband technologies. For many years, it has been the stated goal of the U.S. government to make broadband connections universal. Yet we do not have reliable cost estimates for realizing that goal,

much less have we compared the costs of deploying different technologies to accomplish the task. For years, we have heard that technologies like broadband over power lines and satellite wireless broadband were inches from transforming the marketplace. Yet we did not study these issues sufficiently to determine that those estimates were overblown and unrealistic. A paucity of information has led us to false expectations and delay, distracting from the need to seek out the necessary data-points to make policy. Beyond this problem, we do not have any reliable estimates as to the cost of equipping wire centers with the electronics capable of higher speed DSL. We do not have cost estimates of pushing fiber-optic lines further out in the network -- nor a study of the current and projected demand for broadband capacity in the nation. All of these big picture analyses would be highly useful.

Beyond the collection of market data, we should look to empower the research community (both government- and university-led) to study the Internet. It is hard to believe, but not a single data-link on the privately-owned Internet backbone today is available for study by researchers. Our understanding of the flow of traffic over the network is very limited as a result. Using the proper safeguards to guarantee privacy and protect proprietary commercial information, we should empower the research community to study the problems of the Internet that inhibit our progress. These include security issues, spam, routing tables, peering, packet loss, latency, jitter and a wide variety of topics that could benefit from the application of scientific scrutiny. We should put the country's greatest minds to work on these problems to assist our network owners. This collaborative model of research and production has always been the basis of technological leaps in the Internet space. At present, the only government programs looking into these matters are not driven by competition policy, but rather by national security. The Department of Homeland Security's PREDICT program offers a useful model for this Committee to explore.[27]

Conclusion

The status quo is unacceptable. If we watch and wait, trusting that today's artificially constrained marketplace will magically solve the broadband problem, we will see the U.S. slip farther behind the rest of the world and widen the digital divide -- both domestically and internationally. The consequences are too severe to tolerate this narrow path.

The current trend-lines are clear. We continue to have large gaps in broadband service across the nation. Worse still, the networks we do have are slower, more expensive and less competitive than the global leaders in broadband performance.

The first step on the road to broadband recovery is understanding the problem. We must rectify the deplorable state of data collection in the broadband market. What we do not know undercuts our ability to craft and target viable solutions. Unfortunately, we have just enough data to see the outlines of our problems, but we lack the specific information that would allow us to target and implement solutions at the local level. It is to this task that the Committee must turn its attention. We applaud the spirit behind this Discussion Draft and support the provisions it would introduce.

Solving the broadband problem is a serious challenge of profound importance. We look forward to working with the Committee to find productive solutions.

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[27] See: https://www.predict.org/

Appendix A – Sample Mobile Broadband Offers

Mobile broadband service programs are expensive, slow, not universally available, and severely restrictive. These new mobile broadband lines are for the most part mobile devices with a data service capable of accessing the Internet at under 200 kbps speeds. They are highly unlikely to be used as a primary home broadband connection. In fact, 89.5 percent of mobile wireless connections are business subscribers, not residential subscribers.[28] In total, 17 percent of all broadband lines counted by the FCC are now mobile wireless. But only 3.8 percent of advanced service lines are mobile wireless (under 200 kbps in both directions), and only 2.5 percent of residential advanced service lines are mobile wireless.[29] What's more, the three largest mobile data carriers are AT&T, Verizon and Sprint. Two of these three carriers are also ILECs; are the number one (AT&T) and number three (Verizon) most subscribed-to broadband Internet service providers; and are the top two DSL providers in the U.S.[30] Sprint's joint venture with cable operators also diminishes any potential role it could play as a third pipe.[31]

Here is a sample of available offers:[32]

Sprint

- In Rev A coverage areas (available to 100 million people)
    - Download Speed: 600-1400 kbps
    - Upload Speed: 350-500 kbps
    - Price: $59.99 per month with a 2-year contract. *Or* $79.99 per month with a one-year contract.
        - $36 activation fee
        - $200 early termination fee.
        - Numerous taxes, surcharges and fees
- In non-Rev A coverage areas (available to 94 million additional people)
    - Download Speed: 400-700 kbps
    - Upload Speed: 50-70 kbps
    - Price: Same as above
- Service restrictions:
- "Use as a private line or frame relay service substitution, service, or like equivalent, is prohibited. Not available while roaming. Premium content not available. Shared data not available."
- "We reserve the right to limit or suspend any heavy, continuous data usage that adversely impacts our network performance or hinders access to our network. If your Services include

[28] "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission.
[29] *Ibid.*
[30] Leichtman Research Group, May 2006.
[31] See: http://www2.sprint.com/mr/news_dtl.do?id=8961
[32] Published offerings of Sprint, Verizon and AT&T as of April 19th 2007.

unlimited web or data access, you also can't use your Device as a modem for computers or other equipment, unless we identify the Service or Device you have selected as specifically intended for that purpose."

Verizon

- In Rev A coverage areas (available to 135 million people)
    - Download Speed: 600-1400 kbps
    - Upload Speed: 350-500 kbps
    - Price: $59.99 per month with a 2-year contract, *and* customer must also be a Verizon voice customer. *Or* $79.99 per month with a one-year contract.
        - $25-$35 activation fee
        - $175 early termination fee.
        - Numerous taxes, surcharges and fees
- In non-Rev A coverage areas (available to 67 million additional people)
    - Download Speed: 400-700 kbps
    - Upload Speed: 50-70 kbps
    - Price: Same as above
- Service restrictions:
- "Examples of prohibited uses include, without limitation, the following: (i) continuous uploading, downloading, or streaming of audio or video programming or games; (ii) server devices or host computer applications, including, but not limited to, Web camera posts or broadcasts, automatic data feeds, automated machine to-machine connections or peer-to-peer (P2P) file-sharing; or (iii) as a substitute or backup for private lines or dedicated data connections.
- Will terminate service if you exceed 5GB per month -- or about 6 CD's worth of data (800MB each).

AT&T

- Download Speed: 400-700 kbps
- Upload Speed: 50-70 kbps
- Price: $59.99 per month with a 2-year contract *and* subscription to a voice plan that's at least $39.99 per month. *Or* $79.99 per month with a 1-year contract.
    - $36 activation fee
    - $175 early termination fee.
    - Numerous taxes, surcharges and fees
- Service restrictions:

- "PROHIBITED USES INCLUDE, BUT ARE NOT LIMITED TO, USING SERVICES: (I) WITH SERVER DEVICES OR WITH HOST COMPUTER APPLICATIONS, INCLUDING, WITHOUT LIMITATION, WEB CAMERA POSTS OR BROADCASTS, CONTINUOUS JPEG FILE TRANSFERS, AUTOMATIC DATA FEEDS, TELEMETRY APPLICATIONS, PEER-TO-PEER (P2P) FILE SHARING, AUTOMATED FUNCTIONS OR ANY OTHER MACHINE-TO-MACHINE APPLICATIONS; (II) AS SUBSTITUTE OR BACKUP FOR PRIVATE LINES OR DEDICATED DATA CONNECTIONS; (III) FOR VOICE OVER IP"
- **"UNLIMITED PLANS CANNOT BE USED FOR UPLOADING, DOWNLOADING OR STREAMING OF VIDEO CONTENT (E.G. MOVIES, TV), MUSIC OR GAMES**."
- "Service is not intended to provide full-time connections, and the Service may be discontinued after a significant period of inactivity or after sessions of excessive usage. Cingular reserves the right to (i) limit throughput or amount of data transferred, deny Service and/or terminate Service, without notice"

Appendix B – Addressing the Significance of International Technology Rankings

The latest broadband data from the Organisation for Economic Co-operation and Development (OECD) shows that the United States ranks 15th out of the 30 member nations in per-capita broadband use, down from 12th place just six months ago, and down from 4th place in 2001. In terms of growth in broadband penetration over the past year, the U.S. ranks 20th out of 30. The ITU's 2005 broadband penetration data had the U.S. at 16th overall in the world, a figure that will likely show a drop to 20th when updated data is released. ITU includes several countries in its study with high broadband performance that are not OECD members (which is why the numbers vary).[33]

The U.S. ranks 21st in another ITU metric -- the Digital Opportunity Index -- which measures eleven different variables of technology development, including an important factor not captured in the simple broadband rankings -- the cost of connectivity relative to per capita income. Notably, the U.S. dropped from 8th place in the Digital Opportunity Index in 2000 to 21st place by 2005. We are ranked 36th relative to other nations in the increase in the absolute value of our Digital Opportunity Index score between 2000 and 2005.[34]

We have seen numerous arguments from incumbents eager to discredit these international rankings. They offer ways to explain away the declining status of the U.S. as a global technology pioneer and leader. Given the volume of evidence showing problems in the broadband market, those who would claim otherwise bear a heavy burden of proof. We analyzed the available data and evaluated some of the key arguments supporting and opposing the international rankings. We found that these rankings do have significant meaning.

International rankings matter. Here's why:

- Currently about 40 percent of U.S. households subscribe to broadband service. If the U.S.'s penetration level were as high as in Denmark or the Netherlands, this would translate into an additional 36 million total subscribers, or approximately 33 million additional residential subscribers. This would put the U.S. household penetration level at 67 percent. If the U.S.'s penetration level were as high as 9th-ranked Canada, this would translate into an additional 12.5 million total subscribers, or about 11.5 million additional residential subscribers. This would put the U.S. household penetration level at 50 percent.[35]
    - **These differences have real world consequences.** In 2003 when residential broadband penetration was at 20 percent, economists estimated the annual consumer surplus from broadband to be about $10 billion per year.[36] If broadband penetration were 50 percent of all U.S. homes, consumers would realize a $38 billion annual surplus. If household broadband penetration were at 95 percent, the consumer surplus would be $350 billion annually. Because of network effects, the *benefits of higher broadband penetration accumulate exponentially*, thus **even a minor increase in our international broadband ranking has tremendous positive impact on the American economy.**

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[33] In the 2005 ITU rankings (available at http://www.itu.int/ITU-D/ict/statistics/at_glance/top20_broad_2005.html) four nations were ahead of the U.S. that are not included in the OECD rankings -- Liechtenstein, Hong Kong, Taiwan, and Israel.

[34] International Telecommunications Union, "World Information Society Report 2006", available at http://www.itu.int/osg/spu/publications/worldinformationsociety/2006/report.html.

[35] These data are extrapolated from official FCC broadband data reported in "High-Speed Services for Internet Access as of June 30, 2006," Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission; calculated assuming one line per household, based on July 2006 Census household estimates.

[36] Crandall et. al., "The Effect of Ubiquitous Broadband Adoption on Investment, Jobs, and the U.S. Economy," Criterion Economics, L.L.C., September 2003.

- Though our position in the international rankings is cause for concern, even more troubling is how we have progressed in recent years relative to other countries. From December 2001 to December 2006 the U.S. penetration in the OECD rankings increased by 15.1 subscribers per 100 inhabitants, below the OECD average of 15.9, and 14th overall in the amount of increase among the 30 nations. The average five-year growth rate of the countries that outperformed the U.S. since 2001 is 40 percent higher, and the growth rate of the top performing country, The Netherlands, is over 85 percent higher than that of the U.S.[37]
- From December 2005 to December 2006, the U.S. penetration in the OECD rankings increased by 3.3 subscribers per 100 inhabitants, below the OECD average of 3.4, and 20th overall in the amount of increase among the 30 nations. The average one-year growth rate of the countries that outperformed the U.S. in the past year is nearly 60 percent higher, and the growth rate of the top performing country, Denmark, is 114 percent higher than that of the U.S. Even South Korea, a very early broadband leader that in theory should be closer to market saturation, outperformed the U.S.'s growth over the past year.[38]
- **The growth trends indicate that the U.S. is likely to continue to fall behind the rest of the world in broadband penetration**, which will have lasting and significant effects on the U.S. economy.

Price and Speed

Even if we were able to match the world leaders in penetration rates, we cannot touch the speed and value (cost per unit of speed) they offer their consumers. The value of U.S. connections is alarmingly below other countries.

- Where U.S. consumers routinely pay about $10 per month per mbps (megabit per second), citizens in countries like Japan, South Korea, Sweden and France pay less that $1 per month per mbps.
- A 50 mbps connection in Japan costs $30 per month. Such speeds are not even available in the U.S. American customers can expect to pay $20 to 30 per month for (at best) 3 mbps of DSL connectivity or between $40 to 50 per month for 4 to 8 mbps of cable modem connectivity. [39]
- A French company offers the "triple play" -- 50 mbps of symmetrical broadband service, unlimited telephony and cable television -- for 30 euros per months. Neither this level of service nor this price point is available in the U.S. by a wide margin. [40]

Addressing the Critiques of OECD Data

We have analyzed various arguments which seek to discredit the OECD international broadband rankings, and persuade policy makers that all is well. We took their arguments seriously but found them lacking in each case. Here are a few key points:

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[37] Organization for Economic Cooperation and Development (OECD), "OECD Broadband Statistics to December 2006," April 23, 2006, Available at http://www.oecd.org/sti/ict/broadband

[38] *Ibid.*

[39] Grant Gross, "U.S. customers pay considerably more than the Japanese for bandwidth," IDG, 4 April 2007, http://www.infoworld.com/archives/emailPrint.jsp?R=printThis&A=/article/07/04/04/HNjapbroadband_1.html

[40] "Neuf Offers 50 Mbps in Paris for 30 EUR per month," *MuniWireless*, 7 March 2007, http://www.muniwireless.com/article/articleview/5771/1/2/

- Critics assert that the OECD's methodology does not account for special access lines (a type of broadband data platform that is typically subscribed to by large business customers). We could not verify this with OECD. But if this is indeed the case, it would not influence the U.S. ranking in the OECD tabulation. Using FCC data, and assigning a generous one million "missing" special access lines[41], this would change the U.S.'s December 2006 OECD penetration level from 19.6 to 19.9, still behind 14th ranked Japan, which has 20.2 subscribers per 100 inhabitants. **Thus this possible omission by the OECD does not appear to impact the overall results.**

- Geographic factors like population density are often assigned the blame for the poor U.S. broadband performance. Despite the intuitive logic of this argument, the data simply do not show this to be the case – **econometric analysis shows that geographic factors play little if any role in explaining the U.S. broadband performance relative to other countries**. There is absolutely no correlation between international broadband penetration and population density.[42] Five of the 14 countries with higher broadband penetration levels have lower population densities than the U.S. There is a very weak relationship between international broadband penetration and the percentage of a country's population living in urban areas. But the U.S. is a relatively urban nation, with 79 percent of the population living in urban areas (close to South Korea, whose has an urban population of 80 percent, and which is often held up mistakenly as a counterpoint to U.S. urbanicity). Factors like median household income and poverty play a much larger role in explaining international broadband performance. **When income and poverty are controlled for in econometric models, population density and urban percentage have absolutely no explanatory effect on broadband penetration.**

- We have also seen the OECD data compared to Pew data that puts U.S. household broadband penetration at 42 percent in 2006. This appears to compare favorably to a European Commission (EC) survey that puts the EU 25 household penetration at 23 percent.
  - However, the Pew data is percentage of *adults* with broadband access at home, while the EC's is *households*.
  - The EU 25 includes developing countries that should not be directly compared with the U.S.
  - Using official FCC data (a census of all lines) and U.S. Census Bureau data, the U.S. household broadband penetration is just under 40 percent. According to this data, the bottom three performing U.S. states are below 20 percent household penetration.

- We have seen arguments that inter-model competition (i.e. competition between technologies) is lacking in other nations, and thus the U.S. is poised for some sort of "just around the corner" broadband wonderland. **However, several of the nations ahead of the U.S. in the OECD ranking do have appreciable levels of platform diversity *and* they also have significant amounts of competition within each platform -- something the U.S. lacks.** Countries like Denmark, The Netherlands, South Korea, Sweden, Belgium, Canada and Japan all have significant amounts of second- and third-platform broadband technologies. In fact, in seven of the 14 countries ahead of the U.S. in the OECD rankings, the leading platform has a market share of 62 percent or less. This is very close to the share of the cable platform in the U.S., which is 52 percent in the latest OECD data.

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[41] We say "generous" because the most recent FCC data shows just over 600,000 traditional wireline business lines, the category special access lines falls under.

[42] S. Derek Turner, "Broadband Reality Check II," Free Press, Consumers Union, and Consumer Federation of America, August 2006, Available at http://www.freepress.net/docs/bbrc2-final.pdf.

- On the question of speed/price comparisons with the world leaders, there is little counterevidence. Verizon currently offers the fastest connection that we could find commercially advertised. **According to Verizon's Web site, their fastest fiber offering is 30 mbps download/5 mbps upload, for a whopping $179.95 per month**, plus fees and taxes. In contrast, fiber offerings from Japan are routinely 100 mbps *symmetrical*, and under $50 per month.

Appendix C – State by State Broadband Data

Source: Free Press analysis; Note: All data based on number of residential lines in each state reported in FCC Form 477 as of June 30 2006. Percentages assume one line per household, based on U.S. Census household estimates as of July 1 2006 (2002 data based on June 30 2002 Form 477 data and July 1 2002 Census household estimate)

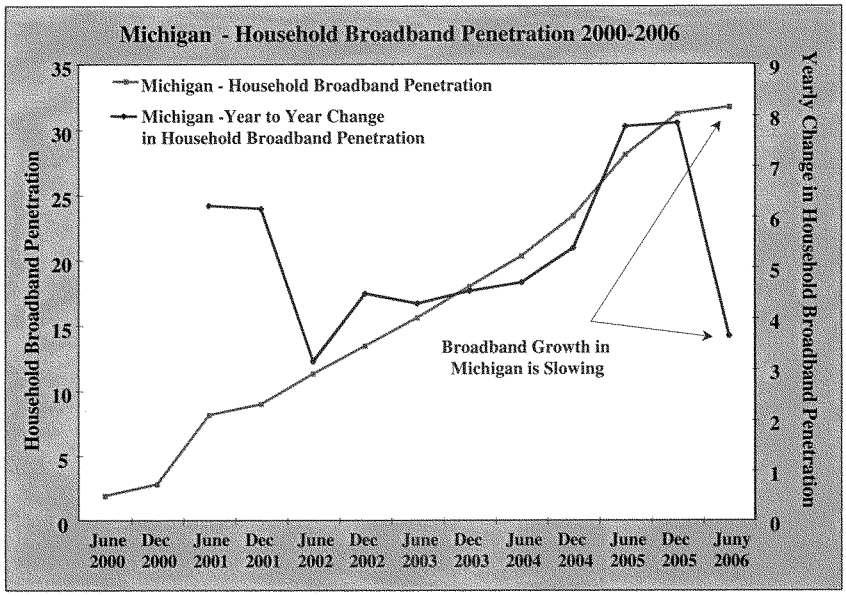
State	Percent of Homes Subscribing to Broadband (2006)	Rank
Connecticut	55.4	1
New Jersey	55.4	2
Hawaii	53.3	3
California	53.0	4
Massachusetts	52.4	5
Maryland	48.8	6
New Hampshir	48.7	7
Rhode Island	47.6	8
New York	47.1	9
DC	45.9	10
Nevada	45.0	11
Washington	44.2	12
Oregon	42.6	13
Virginia	42.2	14
Florida	41.7	15
Kansas	41.6	16
Colorado	40.9	17
Illinois	40.2	18
Georgia	39.2	19
Nebraska	39.1	20
Arizona	38.9	21
Texas	38.7	22
Delaware	38.5	23
Alaska	38.2	24
Minnesota	37.4	25
Utah	37.0	26
Pennsylvania	36.7	27
Ohio	36.1	28
Wisconsin	35.2	29
Indiana	33.9	30
Missouri	33.6	31
Maine	33.4	32
Vermont	32.4	33
Oklahoma	32.3	34
Louisiana	32.1	35
Michigan	31.7	36
Wyoming	30.9	37
Tennessee	30.3	38
Iowa	30.3	39
South Carolina	29.2	40
North Carolina	28.8	41
Montana	28.4	42
Idaho	28.2	43
Kentucky	28.0	44
West Virginia	26.2	45
New Mexico	26.1	46
Arkansas	25.6	47
Alabama	25.4	48
South Dakota	19.4	49
North Dakota	18.6	50
Mississippi	17.9	51
Nationwide	40.0	

State	Percent of Homes Subscribing to Broadband in 2002	Percent of Homes Subscribing to Broadband in 2006	Percentage Point Change 2002 to 2006	Improvement Rank
Connecticut	15.9	55.4	39.5	1
New Jersey	17.2	55.4	38.2	2
Maryland	11.8	48.8	37.0	3
California	17.6	53.0	35.5	4
New Hampshir	13.5	48.7	35.2	5
DC	11.5	45.9	34.4	6
Massachusetts	18.7	52.4	33.8	7
Rhode Island	14.6	47.6	32.9	8
Virginia	10.0	42.2	32.2	9
Nevada	13.2	45.0	31.9	10
New York	15.7	47.1	31.4	11
Illinois	9.1	40.2	31.1	12
Oregon	11.6	42.6	31.0	13
Washington	14.2	44.2	29.9	14
Colorado	11.3	40.9	29.6	15
Kansas	12.3	41.6	29.3	16
Delaware	9.2	38.5	29.3	17
Florida	12.6	41.7	29.2	18
Indiana	4.9	33.9	29.0	19
Pennsylvania	8.0	36.7	28.7	20
Texas	11.0	38.7	27.6	21
Georgia	12.2	39.2	27.0	22
Nebraska	12.2	39.1	26.9	23
Utah	10.3	37.0	26.7	24
Wyoming	4.3	30.9	26.6	25
Arizona	12.4	38.9	26.5	26
Ohio	10.4	36.1	25.7	27
Minnesota	11.8	37.4	25.6	28
Missouri	8.2	33.6	25.4	29
Wisconsin	9.8	35.2	25.4	30
Maine	8.5	33.4	24.9	31
Montana	3.7	28.4	24.7	32
Kentucky	3.6	28.0	24.4	33
Vermont	8.9	32.4	23.5	34
Oklahoma	9.1	32.3	23.3	35
Iowa	7.8	30.3	22.5	36
Louisiana	10.1	32.1	22.0	37
Alaska	16.2	38.2	22.0	38
Idaho	6.8	28.2	21.4	39
New Mexico	4.9	26.1	21.1	40
South Carolina	8.5	29.2	20.7	41
Michigan	11.3	31.7	20.4	42
Tennessee	10.3	30.3	20.1	43
West Virginia	6.3	26.2	19.9	44
Arkansas	6.7	25.6	18.9	45
Alabama	7.6	25.4	17.9	46
North Carolina	10.9	28.8	17.8	47
South Dakota	3.4	19.4	16.0	48
North Dakota	4.4	18.6	14.1	49
Mississippi	4.2	17.9	13.7	50
Hawaii	N/A	53.3	N/A	N/A
Nationwide	11.7	40.0	28.3	

Source: Free Press analysis; Note: All data from FCC Form 477 as of June 30 2006; percent rural population data from U.S. Census Bureau

Cable Modem Availability Where Cable Systems Offer Cable TV Service (% of end user premises)				Percent Rural Pop	xDSL Availability Where ILECs Offer Local Telephone Service (% of residential end user premises)				Percent Rural Pop	Percent of Telephone Lines that are RBOC
State	Jun-05	Dec-05	Jun-06		State	Jun-05	Dec-05	Jun-06		
New Jersey	96.8%	96.8%	99.9%	5.6%	New Jersey	86.8%	88.0%	88.0%	5.6%	75.7%
Massachusetts	98.3%	98.9%	98.9%	8.6%	Florida	84.6%	85.6%	88.0%	10.7%	65.0%
New York	98.3%	97.3%	98.8%	12.5%	Louisiana	85.3%	85.2%	87.4%	27.4%	74.3%
Maryland	94.1%	97.3%	97.6%	13.9%	Georgia	77.0%	83.7%	87.3%	28.4%	65.6%
California	96.6%	97.7%	97.2%	5.6%	North Dakota	81.3%	83.7%	86.2%	44.1%	33.3%
Illinois	96.9%	98.4%	97.2%	12.2%	Nebraska	52.0%	70.7%	86.1%	30.2%	29.4%
Wisconsin	96.5%	N/A	96.3%	31.7%	California	84.1%	84.8%	85.9%	5.6%	80.8%
Missouri	88.9%	89.4%	96.0%	30.6%	Nevada	81.2%	84.0%	85.3%	8.5%	25.7%
Florida	93.7%	97.1%	95.9%	10.7%	Kentucky	59.8%	74.3%	84.5%	44.2%	42.1%
Virginia	94.6%	95.9%	95.9%	27.0%	Iowa	77.3%	80.5%	83.1%	38.9%	51.8%
Colorado	87.3%	95.9%	95.8%	15.5%	North Carolina	74.9%	78.8%	82.7%	39.8%	44.8%
Tennessee	94.9%	97.0%	95.2%	36.4%	Pennsylvania	74.3%	76.2%	82.5%	22.9%	62.2%
Texas	86.6%	88.1%	95.1%	17.5%	Utah	77.7%	80.1%	82.1%	11.8%	68.6%
Ohio	97.7%	96.4%	94.8%	22.6%	Colorado	74.3%	80.2%	82.0%	15.5%	76.6%
North Carolina	95.4%	96.1%	94.8%	39.8%	Minnesota	75.9%	78.5%	81.1%	29.1%	50.1%
Indiana	92.9%	96.1%	94.0%	29.2%	Ohio	73.0%	78.7%	81.0%	22.6%	56.6%
Washington	92.4%	93.0%	93.6%	18.0%	Oregon	77.1%	79.2%	80.7%	21.3%	71.2%
Pennsylvania	89.5%	92.5%	93.5%	22.9%	Tennessee	79.8%	80.2%	80.7%	36.4%	63.0%
Michigan	98.0%	98.3%	91.7%	25.3%	Washington	74.8%	78.4%	80.1%	18.0%	75.0%
Arizona	85.0%	95.3%	91.4%	11.8%	Kansas	77.5%	78.6%	79.5%	28.6%	58.4%
Nebraska	90.8%	91.4%	91.4%	30.2%	South Carolina	73.3%	75.6%	78.2%	39.5%	57.9%
Alabama	91.1%	95.3%	90.9%	44.6%	New York	80.9%	80.1%	78.1%	12.5%	59.2%
Minnesota	88.6%	95.5%	90.8%	29.1%	Alabama	75.7%	76.5%	78.1%	44.6%	63.0%
Kentucky	86.7%	88.5%	90.6%	44.2%	Illinois	76.6%	76.8%	77.9%	12.2%	75.2%
Oregon	89.7%	89.7%	89.7%	21.3%	Alaska	72.0%	75.4%	77.9%	34.4%	0.0%
Maine	82.9%	85.8%	89.1%	59.8%	Wyoming	70.1%	73.7%	77.3%	34.9%	68.3%
Georgia	88.3%	92.3%	89.1%	28.4%	Wisconsin	75.1%	76.6%	76.1%	31.7%	54.4%
Iowa	85.0%	91.9%	88.5%	38.9%	Montana	70.5%	70.8%	76.1%	45.9%	55.8%
West Virginia	82.2%	82.4%	88.2%	53.9%	South Dakota	72.9%	72.6%	76.0%	48.1%	34.9%
Oklahoma	80.1%	84.5%	87.6%	34.7%	Idaho	68.1%	69.7%	75.6%	33.6%	81.1%
Louisiana	93.6%	55.6%	87.1%	27.4%	Texas	71.5%	74.2%	75.4%	17.5%	69.4%
Kansas	86.8%	87.4%	86.1%	28.6%	Maryland	75.6%	77.1%	75.1%	13.9%	80.8%
South Carolina	79.3%	82.7%	84.2%	39.5%	Oklahoma	72.4%	73.1%	75.0%	34.7%	61.8%
Connecticut	83.0%	83.4%	83.7%	12.3%	New Mexico	71.8%	75.5%	75.0%	25.0%	78.0%
Montana	21.0%	87.1%	83.3%	45.9%	Indiana	70.7%	72.7%	74.2%	29.2%	74.4%
Idaho	77.6%	82.8%	83.3%	33.6%	Mississippi	72.6%	73.0%	73.5%	51.2%	80.5%
New Hampshire	95.6%	81.6%	82.8%	40.7%	Missouri	68.3%	68.6%	71.9%	30.6%	59.8%
New Mexico	71.6%	74.8%	79.5%	25.0%	West Virginia	56.9%	61.2%	68.3%	53.9%	70.9%
North Dakota	79.2%	89.1%	79.4%	44.1%	Maine	69.9%	67.2%	67.0%	59.8%	62.3%
Mississippi	76.9%	91.9%	78.9%	51.2%	Arizona	61.2%	64.5%	66.9%	11.8%	63.4%
Arkansas	64.6%	67.1%	77.3%	47.5%	Michigan	64.8%	65.1%	66.4%	25.3%	73.3%
South Dakota	62.1%	N/A	58.5%	48.1%	Virginia	66.0%	66.9%	65.6%	27.0%	66.7%
Alaska	N/A	N/A	N/A	34.4%	Arkansas	57.2%	62.9%	65.6%	47.5%	56.5%
DC	N/A	N/A	N/A	0.0%	Vermont	64.4%	61.3%	59.9%	61.8%	71.1%
Delaware	N/A	N/A	N/A	19.9%	New Hampshire	65.0%	62.6%	59.4%	40.7%	67.8%
Hawaii	N/A	N/A	N/A	8.5%	Connecticut	N/A	N/A	N/A	12.3%	84.3%
Nevada	N/A	N/A	N/A	8.5%	DC	N/A	N/A	N/A	0.0%	82.7%
Rhode Island	N/A	N/A	N/A	9.1%	Delaware	N/A	N/A	N/A	19.9%	80.0%
Utah	N/A	N/A	N/A	11.8%	Hawaii	N/A	N/A	N/A	8.5%	0.0%
Vermont	N/A	N/A	N/A	61.8%	Massachusetts	N/A	N/A	N/A	8.6%	73.8%
Wyoming	N/A	N/A	N/A	34.9%	Rhode Island	N/A	N/A	N/A	9.1%	54.7%
Nationwide	91.1%	92.6%	93.1%	21.1%	Nationwide	75.9%	77.7%	79.3%	21.1%	66.7%

Appendix D – Michigan Broadband Data



Mr. MARKEY. Thank you, Mr. Scott, very much.

Our next witness is Mr. Kyle McSlarrow. Mr. McSlarrow is the president and chief executive officer of the National Cable and Telecommunications Association, the association representing the cable industry. We welcome you back, Mr. McSlarrow. Whenever you are ready, please begin.

STATEMENT OF KYLE MCSLARROW, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL CABLE AND TELECOMMUNICATIONS ASSOCIATION

Mr. MCSLARROW. Thank you, Mr. Chairman and Ranking Member Upton, Mr. Barton, members of the subcommittee. Thank you for having me here today.

First, just to get to the bottom line, our industry supports the thrust of the discussion draft. I think there is no question, and I suspect everyone on this panel will agree, we need better data. We need better data for lots of reasons, and I don't think anybody is particularly happy with the current definition of 200 kilobits in terms of the FCC's analysis of what constitutes high-speed Internet access in America. But even if we do end up at the same point, I do think it is important to step back and think about the perspective we are bringing to get there. There are two ways of looking at this. One way is the way Mr. Cohen and Mr. Scott just presented, which is the sky is falling, we have got a "problem" or maybe even several problems. I actually reject that. I realize I may be rowing against the tide here, but I think the more realistic way to look at this is, there are a lot of great things happening in this country in broadband. Now, we would say that cable modem service is available to 94 percent of all American households. I think Ben used a figure that would have been 90 percent. So whether it is 6 percent or 10 Americans who do not have broadband connectivity, we would say the way we should look at this is, speeds are getting faster, prices are dropping per megabit as we go along, broadband is extending, but there is a core part of the country, whether it is 6 or 10 percent, that we ought to be focused on. How do we get broadband connectivity with all the benefits, culturally, social and economically, to those areas, and I think it is important to define the problem we are trying to solve.

There is no doubt in my mind, Mr. Chairman, that your discussion draft would go a long way towards addressing that goal, and therefore we support it, but I think as we move along in terms of trying to define what high-speed Internet access really is, I think we should be mindful to the point you said earlier in your opening statement, which is 200 kilobits might have made sense at one time. It hasn't kept pace with change, and the one thing that defines this market today is that it is changing so fast that we have to be careful about anything we actually put in legislation in terms of defining high-speed Internet broadband and what it means, and so as we work with you, Mr. Chairman, and we appreciate the offer to do so, I think we would want to make sure that the FCC and NTIA are given the flexibility to gather as much useful information for you all as policymakers as possible without unnecessarily restricting what those definitions look like, because what makes sense today may well look strange a couple of years from now.

My final point, I think whether or not we agree on the speeds that are being delivered, there is no question that cable modem services across the Nation are offering the fastest speeds in the Nation, but just last week you may have seen that Brian Roberts, the CEO of Comcast, at our convention announced our plans in the next 2 or 3 years to start rolling out a new cable modem specification that would allow us to have download speeds well above 100 megabits per second. So it is not like the marketplace isn't addressing consumer demand, and it isn't like consumer experience isn't getting better. So whatever we do, we would just throw down a caution that we should make sure that we are not stopping those developments from taking place.

Thank you, Mr. Chairman.

[The prepared statement of Mr. McSlarrow follows:]

STATEMENT OF KYLE MCSLARROW

Good morning Chairman Markey, Ranking Member Upton, and members of the subcommittee. My name is Kyle McSlarrow, and I serve as the president and chief executive officer of the National Cable & Telecommunications Association. NCTA is the principal trade association for the cable industry, representing cable operators serving more than 90 percent of the nation's cable television households and more than 200 cable program networks. The cable industry is the Nation's largest broadband provider of high-speed Internet access after investing $110 billion over ten years to build out a two-way interactive network with fiber optic technology. Cable companies also provide state-of-the-art digital telephone service to over 10 million American consumers.

Mr. Chairman, thank you for inviting me here to testify on your legislative proposal to improve the quality of information on broadband deployment and broadband adoption rates in this country. As you know, the cable industry supports sensible and targeted Federal initiatives designed to spur broadband deployment in rural areas of the country where absent some help, no private party would find it viable to build a high-speed broadband network. We believe that the government can and should play a role in making certain that the incredible economic and social benefits of broadband connectivity are extended to households and small businesses in those unserved areas. In order to do that, it is vitally important to identify areas that lack access to broadband service. Identifying communities that lack broadband access and obtaining information about the factors that have inhibited broadband deployment to these areas can assist policy makers and the private sector in developing initiatives that will extend broadband service to all Americans. We therefore support your legislative initiative to collect data regarding the availability of broadband services across the country.

However, Federal assistance for broadband deployment must be carefully targeted to unserved communities. Federal subsidies for broadband deployment in rural areas where private sector businesses are already offering service are unfair to those companies that take the risk to deploy service. Such market-tilting subsidies deter those who have invested from investing more, and they are a waste of limited Federal resources. Better, more meaningful data should allow us to avoid those unfortunate consequences.

We believe that a nationwide survey of broadband service will show the significant progress that has been made in this country with respect to both broadband deployment and adoption. I outlined cable's perspective on broadband deployment in a recent letter to you and the members of this committee.

In our view, America's current Organization for Economic Co-operation and Development (OECD) ranking does not tell the full story. And it should sound a cautionary note that we are currently examining how to ensure better data that actually provides the basis for sound policy decision-making in the United States but are often prepared to credulously assume that the same infirmities won't appear in international data.

Mr. Chairman, broadband deployment in this country continues to grow at a robust rate. And the total number of consumers who have signed up for high-speed Internet service in the U.S. far exceeds that in any other country in the world—in fact, U.S. broadband users represent more than 30 percent of all the broadband connections in OECD countries.

With respect to cable, which is the largest provider of broadband services in the United States, deployment is the result of our massive investment of risk capital in the last decade making it possible for us to provide high-speed Internet access, competitive voice service, and other advanced services. In fact, a recent report by Kagan Research shows that cable broadband service is now available to more than 94 percent of all U.S. homes.

Due to a highly competitive marketplace, the availability of broadband service continues to grow while the price-per-megabit continues to drop. And more broadband competition and investment is imminent. Research and Markets estimates that within five years, there may be as many as 20 million high-speed wireless subscribers, and Parks Associates estimates that by the year 2011 there will be 2.5 million broadband-over-power line subscribers.

While the price-per-megabit declines, broadband speeds continue to increase. When cable first offered high-speed Internet service as an always on alternative to dial-up access in the mid-1990s, we offered speeds of about 1–1.5 Mbps. Today, most cable operators offer broadband speeds of up to 5 Mbps and greater—and some, like Cablevision, offer speeds up to 50 Mbps. Other cable operators offer a service that provides for "boosts" of higher speeds ranging from as high as 10–20 Mbps on an on-demand, capacity-available basis. In addition, many cable operators will soon deploy a new architecture (DOCSIS 3.0) which will allow speeds above 100 Mbps.

As we stated at the outset, the cable industry supports legislation to collect data on broadband deployment in the U.S. We have some suggestions that we believe could further strengthen and clarify the Discussion Draft.

Section 2(a) Definition of High-Speed Transmission—The current FCC definition of broadband—200 kbps downstream and 200 kbps upstream—is clearly antiquated given the speeds that most broadband providers are offering consumers today. Most cable operators offer download speeds that exceed 5 Mbps. Some cable operators offer even higher download speeds while others offer tiers of service with different levels of downstream and upstream speeds. However, cable broadband is an asymmetrical service. What that means is that upstream speeds are usually lower than downstream speeds, which conforms to the way most consumers use the Internet today. For example a consumer needs very little bandwidth to send a command to a Web site which typically results in a large amount of data being downloaded to the consumer. As such, some operators that offer download speeds from 5 to 10 Mbps may well offer upload speeds that are less than 1 Mbps.

The Discussion Draft would revise the definition of "advanced telecommunications capability" to say that "high speed" means allowing the user to download at not less than 2 Mbps and upload at not less than 1 Mbps. Under that definition, a high-speed Internet service that offers incredibly fast download speeds approaching 10 Mbps, but upload speeds less than 1 Mbps, would not qualify as a broadband service.

We do not believe the definition in the Discussion Draft accurately reflects the broadband marketplace. In fact, given the continuing rapid advances in technology and changes in the way broadband service providers may configure their systems in order to meet consumer demand in a competitive marketplace, it probably makes little sense to include an exact definition of "high-speed" in the statute—the definition could be outdated before the bill becomes law. Instead, Congress should encourage or mandate the FCC to periodically update its definition of broadband service, taking into account technology and marketplace trends.

In any event, Congress should make clear that the FCC's obligation under section 706 is to promote broadband deployment by all providers, regardless of technology, and that the Commission must utilize the appropriate mix of deregulatory measures to fulfill that obligation.

Section 3(g) Protection of Information—As I indicated earlier, broadband is a hotly competitive marketplace, and therefore deployment data is extremely sensitive. We appreciate that you have included a provision to clarify that the bill may not be "construed to authorize or require the NTIA to make publicly available any proprietary information" gathered in creating a comprehensive nationwide inventory of existing broadband service and infrastructure. We would urge the committee to strengthen that provision to state unambiguously that proprietary information submitted to the NTIA is protected against disclosure, including disclosure pursuant to Freedom of Information Act requests. To the extent States and localities are given access to this data, they should also be made responsible for protecting it against disclosure as well.

Section 4 Grants to States and Communities for Broadband Map Development—Section 4 authorizes NTIA to make grants to States and local governments to "assist in providing the NTIA with information to facilitate the development of the broadband inventory map." Grants could be used by States and localities for "devel-

oping and obtaining information regarding the geographic extent of broadband services deployment and public availability." While we recognize that States and localities will have more direct knowledge of levels of broadband deployment that may be useful in helping to create the broadband inventory map, we are concerned that this provision could be read to authorize these governmental units to engage in their own broadband data collection efforts. These efforts may not be consistent with the FCC's reporting requirements, imposing duplicative and unnecessary burdens on broadband providers. To the extent the States and localities are permitted to play a role under this legislation, they should be required to use FCC data in order to assist the NTIA in developing a broadband inventory map.

Section 5 Broadband Service Survey—Section 5(a)(2) would require periodic surveys of the "advertised and the actual transmission speeds" of broadband service in urban, suburban and rural areas. Cable companies make it very clear in all of their advertising materials that maximum advertised speeds are not guaranteed at all times and that actual speeds are governed by many factors that are beyond the operator's control. Actual transmission speeds can vary significantly depending upon traffic anywhere on the Internet, both globally and locally. Heavy usage of peer-to-peer services or extensive use of full-motion video downloads and video streaming by just a few users in a neighborhood can result in slower download speeds for all users.

Of course, cable operators employ network management tools to try to ensure the best possible Internet experience for the greatest number of customers. But there is no way for any Internet service provider to account for everything that might happen on the Internet that might affect download or upload speeds at any given moment in time. So the real issue should not be to compare so-called "advertised" speeds with so-called "actual" speeds but rather to make sure that disclosure to consumers is uniform and sufficient to ensure that they know what they're paying for. Any attempt by the Commission to get a reliable picture of "actual" network speeds must be based on monitoring over a period time that includes periods of maximum demand and peak usage and periods when usage is lower and user applications require less bandwidth.

Congresswoman Doris Matsui recognizes the need to account for such variations in her bill H.R. 1818, the Broadband Deployment Acceleration Act. The Congresswoman would also set a statutory definition of current generation broadband service—a notion with which we disagree—but H.R. 1818 does recognize that speeds should be gauged based on what is available "at least a majority of the time during periods of maximum demand to each subscriber who is utilizing such services." Should the committee decide to include language directing the Commission to establish criteria for determining broadband transmission speeds, it should do so as proposed in H.R. 1818.

Finally, if the Commission is being asked to compare broadband speeds available in America with speeds available in other countries, the Commission should be directed to find a way to compare apples to apples—that is, it should apply the same standard that takes into account speed variations that affect users in other countries, so that we are not accepting without proof that average download speeds in other nations are greater than they are here.

Thank you again, Mr. Chairman, for the opportunity to testify. We look forward to working with you and the Members of the Subcommittee on legislation to establish a reliable nationwide inventory of the availability of existing broadband service. I would be happy to answer any questions you may have.

Mr. MARKEY. Thank you, Mr. McSlarrow, very much.

Our next witness very significantly is an alumnus of this subcommittee, and we very much are proud of his work. In addition, he also happens to be the president and chief executive officer of the Cellular Telecommunications Industry Association. That is the association which represents the wireless industry, and we are proud of him and glad to see him back here before us again, and whenever you are ready to go, Steve. This is Steve Largent. Please begin.

STATEMENT OF HON. STEVE LARGENT, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CTIA

Mr. LARGENT. Thank you, Chairman Markey. I appreciate that, and I also found it amusing that your vice chairman is following in your footsteps with his ardent sense of humor.

Mr. MARKEY. Let me rescind some of the nice things I said about the gentleman. I ask unanimous consent to revise and extend my remarks. Please begin.

Mr. LARGENT. Good morning, Mr. Markey and members of the subcommittee. I am pleased to have this chance to testify on the draft broadband mapping bill.

Wireless is an important component to our Nation's broadband infrastructure. In the most recent reporting period, 59 percent of all broadband subscriber additions were wireless, and more than 200 million Americans can now choose to use wireless for mobile e-mail access, web surfing, music, video and increasingly critical business and medical functions. CTIA's member companies are investing heavily to increase the capacity of their networks so they can provide what consumers demand. With the implementation of the right policies, CTIA members will do even more, with consumers being the ultimate winners.

I applaud Chairman Markey for his leadership on the issue of how best to determine the state of broadband deployment in America. The wireless industry agrees that a broadband census can be a timely and useful tool to help ensure that all Americans can participate in the 21st century economy. We support the chairman's objective, and I have several modest suggestions about ways you can maximize the quantity and quality of the data you seek.

CTIA suggests that rather than changing the existing FCC reporting requirement for broadband, the bill should focus on the development of an inventory map that shows the availability of service offerings at all speeds above 200 kilobits. The information collected can be categorized across a range of speeds such as 200 kilobits to 1 megabit, 1 megabit to 2.5 megabits, and so on. We believe this approach will enhance the value of the map by giving a more textured picture of the range of available services. Arbitrarily excluding wireless offerings and other broadband services below 2 megabits per second would render the national deployment data and the related mapping incomplete and inaccurate and the very flaw that plagues the OECD's broadband data.

A second concern is tying collection data and mapping to nine-digit ZIP code areas. The wireless industry provides wireless broadband to areas that don't receive mail. Zip codes don't matter in a wireless world. CTIA's member companies compete on the basis of their broadband coverage. That is why they have created digital coverage maps and make these maps available to their customers through company Web sites and other promotional materials. Wireless carriers should be permitted to provide these maps to the NTIA to satisfy data collection needs regarding wireless broadband. The agency can then manipulate the data into any format that they find useful.

Third, CTIA's members have no concerns about States or localities having access to the information provided to the NTIA and the FCC. However, the data collection role given to the States in the

draft bill appears to establish an independent basis for State jurisdiction over broadband services. This could undermine the clear, logical and settled nature of the Federal jurisdiction in this area. It should be made clear that no such independent regulatory authority is intended.

As you move forward, I ask that you keep in mind several other issues that are critical to making wireless broadband service ubiquitous. First, commercial carriers will continue to need more spectrum in order to meet growing consumer demand for bandwidth. Accordingly, the upcoming 700 MHz auction must occur on schedule and with the spectrum allocated as designated by law. Second, spectrum has already been auctioned but must be made available to companies that have paid for it. The industry applauds the efforts of the NTIA, but the work remains to be done to ensure an orderly and quick transition of existing Government users off of the spectrum in the AWS spectrum auction. Third, the Federal-State Joint Board's recent recommended decision to cap funding for competitive carriers will harm wireless deployment in rural America and it should not be adopted by the FCC. The universal service program needs to be fixed certainly, but the Joint Board's proposal is discriminatory and will harm the very consumers that the fund is supposed to support.

Finally, I would like to thank the 23 members of this committee who signed on to the analog sunset letter a few weeks ago. Bringing an end to the analog mandate will free up spectrum that can be used for broadband service, and I especially would like to thank Mr. Inslee and Mr. Pickering for their leadership on this important issue.

Thank you again, Mr. Chairman, and I would be happy to answer any questions you may have.

[The prepared statement of Mr. Largent follows:]

CTIA
The Wireless Association®

Expanding the Wireless Frontier

WRITTEN TESTIMONY
of
Steve Largent
President and CEO
CTIA-The Wireless Association®
Before the
United States House of Representatives
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
May 17, 2007

Good morning, Chairman Markey, Ranking Member Upton, and members of the Subcommittee. On behalf of CTIA – The Wireless Association®, I am pleased to have this opportunity to testify on the draft broadband mapping legislation. The wireless industry agrees with Chairman Markey that a U.S.-based broadband census can be a timely and useful tool to help U.S. policymakers assess how effective their policies have been to ensure that all Americans can participate in the 21st century economy, regardless of where they live or their economic status. I applaud Chairman Markey for his leadership on the issue of how best to determine the state of broadband deployment in America.

As you know, the most-often cited international statistics on broadband, Internet access, and technology do not always tell the whole story and the recent OECD's broadband rankings report is no different. This recent report specifically excludes third generation (3G) wireless in its assessment of broadband deployment. I believe this is one of the many flaws of the report because as I will demonstrate to you today, wireless broadband is a very real and important part of our nation's broadband infrastructure. Ignoring the status of wireless

broadband deployment in the U.S. minimizes the status of overall broadband availability in America.

I am here to tell you about what CTIA's member companies have done to bring wireless broadband services to millions of Americans at rates they can afford, and to make you aware of the tools wireless companies have already developed so that consumers can easily determine their wireless broadband coverage. I believe you will find these existing tools very useful in your efforts to collect wireless broadband deployment data. I will also share with you the wireless industry's thoughts on the draft broadband census bill, and list a few key issues that if resolved quickly and correctly will help accelerate wireless carriers' ability to directly compete with other providers of broadband services. This is a win-win result for all Americans because it means more and different kinds of broadband services will become a reality to more Americans at rates they can afford.

So, what is wireless broadband and what are wireless companies doing to bring these services to the American people. Wireless broadband comes in more than 31 flavors, reflecting the diversity of demands and desires among our customer base. The single consistent characteristic to all wireless broadband services is mobility – our more than 230 million subscribers want their wireless e-mail or their wireless Internet access wherever and whenever.

Wireless broadband services encompass mobile text and photo-messaging, mobile game and ring-tone downloads, mobile music and video, and mobile e-mail and web access. Services include individual, personally-oriented applications, and wide-ranging enterprise solutions used by government and industries as diverse as agriculture, education, finance, healthcare, manufacturing, transportation, construction, hospitality, professional services, and

utilities, for purposes such as field force management, to cardiac outpatient telemetry that enable doctors to remotely access critical medical information – real-time vital signs, clinical notes and scans – cutting down their decision time and speeding treatment of patients. For example, the Integrated Clinical Information System Mobile (ICIS Mobile) has been deployed by UCLA and gives doctors access to real-time information, enabling them to make quick judgments about treatment. Remote medical diagnostic services such as CardioNet's Mobile Cardiac Outpatient Telemetry (MCOT) system helps physicians and patients by providing heartbeat-by-heartbeat, ECG monitoring, analysis and response, helping doctors rapidly diagnose and effectively treat patients with cardiac arrhythmia.

U.S. commercial wireless service providers are investing billions of dollars a year, more than $24 billion to be exact, to increase the capacity of their networks so they can compete with other providers of broadband services and deliver the kinds of mobile broadband applications I outlined above, as well as new applications that are still on the drawing board. Attached to my testimony today is a chart listing a sample of the carriers providing wireless broadband today, their optimal and average speeds and the number of Americans that have access to the wireless broadband services they offer. Collectively, wireless companies are providing wireless broadband coverage to more than 200 million Americans in communities across the country.

National carriers Sprint Nextel and T-Mobile USA have announced they will each invest more than $2 billion in their networks over the next year and a half so they can offer new and faster wireless broadband capabilities to compete with other providers of wireless and wired broadband services. AT&T Mobility and Verizon Wireless are also spending billions of dollars deploying wireless broadband technologies so that more consumers have

access to high speed mobile broadband services, including Internet access and audio and video services. Regional companies like Alltel, Alaska Communications Systems and Cellular South are also investing in wireless broadband.

Alltel has built-out high speed Evolution-Data Only (EV-DO) networks in communities that are home to more than 44 million people, providing their subscribers with access to wireless Web-based e-mail, texting and picture messaging, and Internet access via its Axcess Broadband and MobileLink services. Alaska Communications Systems offers EV-DO-based broadband coverage in Anchorage, Fairbanks, Juneau, Eagle River, and the Mat-Su Valley in Alaska, providing their customers with wireless text and picture messaging, and, via their ACS Mobile Broadband offering, wireless Internet access. Cellular South offers EV-DO coverage in Starkville, Mississippi, and along the Mississippi Gulf Coast, giving Cellular South's subscribers in these markets wireless broadband Internet access. Cellular South currently provides broadband speeds over EV-DO networks in Starkville, Mississippi and along the Mississippi Gulf Coast. Cellular South specifically targeted the Gulf Coast for EV-DO deployment to help with the recovery from Hurricane Katrina and in preparation for future natural disasters.

How are Americans responding to these wireless broadband offerings? Consider the following:

- More than half of all wireless consumers in the U.S. have web-capable devices;
- 59% of all broadband subscriber additions in the first half of 2006 were mobile wireless subscribers;

In February 2007 in the U.S. alone, the research firm M:Metrics reports:

- 81.2 million wireless subscribers sent Text Messages
- 30.7 million wireless subscribers used Photo Messaging
- 20.5 million wireless subscribers browsed News and Information
- 20 million wireless subscribers purchased Ringtones
- 17.3 million wireless subscribers used Personal E-Mail
- 13.8 million wireless subscribers used Mobile Instant Messenger
- 10.2 million wireless subscribers used Work E-Mail
- 6.8 million wireless subscribers purchased Wallpaper or Screensaver
- 6.8 million wireless subscribers downloaded Mobile Game

I tell you all of this for two reasons. First, I want to brag a bit about an industry I find vibrant and exciting. Second, I want to emphasize to you the kind of broadband deployment the OECD report excludes. Clearly, Americans are demanding wireless broadband services to satisfy their need for mobile broadband, and my member companies are responding to meet their customers' varying demands. Not including wireless in a national assessment of broadband deployment would ensure that the broadband mapping endeavor will generate an incomplete and inaccurate assessment of the reality of broadband deployment in this country.

That brings me to the issue at hand in the draft bill – the status of broadband deployment in the U.S. and where does wireless broadband fit in. I am proud to say that the wireless industry has already developed the tools to help you figure that out.

I am sure you are all familiar with the recent television and print ads by AT&T and Sprint in which the companies take shots at the other's wireless broadband coverage. These

ads reflect the reality of the wireless industry – it is bare-knuckled competition at its finest and most entertaining. I raise this example to draw your attention to a serious point. Wireless providers compete on the basis of their wireless broadband coverage. That's why they have created digital coverage maps and they make these coverage maps available to their customers through company websites and other promotional materials. Attached to my testimony are links to just a few of the wireless company websites that provide these coverage maps which depict where wireless broadband is available and where it is not. I strongly suggest that you review and use these existing mapping tools as part of your data collection efforts on the deployment of wireless broadband.

As I explained in my introductory remarks, the wireless industry supports both the spirit and purpose of the draft bill. I offer the following suggestions about ways you can maximize the quantity and quality of the data obtained about wireless broadband deployment in the U.S.

First, the definition of "high–speed" excludes wireless offerings that are currently being purchased by consumers to satisfy their demand for mobile e-mail access, web surfing, and full-motion video. This exclusion could have two serious, negative consequences: the speed-based distinction between "high speed" and other forms of broadband may cause regulatory disparity among competing broadband platforms, creating an uneven playing field; and, excluding deployment data about the kinds of wireless broadband services I have described to you today in a report on U.S. broadband deployment would ensure the national deployment data and related mapping would be incomplete and inaccurate. Further, not all wireless broadband services are the same and can not be accurately compared on a one-to-one basis according to speed.

CTIA suggests that rather than changing the existing FCC reporting requirement for broadband, the bill focus on the development of a broadband inventory map that shows the availability of broadband offerings at speeds above 200 kbps, but require the information be categorized across a range of speeds such as 200k-1Mbps, 1 Mbp-2.5 Mbps, 2.5Mbp-10 Mbps, etc.

A second concern is tying collection of data and mapping to 9-digit zip code areas. While a well-intentioned undertaking, there does not appear to be an empirical reason for doing so. Rather, CTIA suggests that wireless providers provide to the NTIA the digital maps and related information they already provide to consumers. This format will allow the NTIA, the FCC or any other agency, federal or state, to manipulate the data into a 9-digit zip code format, census tract, or into any other format that is determined useful. This approach ensures there is minimal confusion for consumers between the information they receive from companies about their coverage and the information they receive from the government. Keep in mind that the wireless industry provides wireless broadband to areas that don't receive mail. Zip codes don't matter.

Third, though CTIA's members have no concerns about states or localities having access to the information provided to the NTIA and/or the FCC, the data collection role given to the states in the draft bill appears to establish an independent basis for state jurisdiction over broadband services. This not only creates unnecessary tension between state and federal authorities, it also undermines the clear, logical, and settled nature of federal jurisdiction over broadband services. Clearly granting the federal government exclusive jurisdiction over obtaining broadband deployment data from commercial providers would resolve any confusion and potential jurisdictional battles.

A final concern is that the draft language also appears to open the door to federal, state and local entities obtaining proprietary, competitively sensitive information that is well beyond the scope of what is being currently requested by the FCC, with little relevance to the status of broadband deployment. A solution would be to require that the data collected and reported by broadband providers be the same information they report to consumers via websites and any other materials accessible to consumers. This will ensure consistency between the mapping and reality, will ensure the information reported is as timely and accurate as possible (*i.e.,* FTC and state laws over truth in advertising ensure info accessible to consumers is accurate) and will relieve the burden on the FCC and NTIA from setting up and maintaining administrative processes to safeguard sensitive, proprietary information.

As you consider possible changes to the draft census bill, I would ask that you consider the following issues that are key drivers to bringing more and better wireless broadband coverage and services to more Americans at rates they can afford.

First, make more useable spectrum available to commercial carriers. The upcoming 700 MHz auction is a fantastic opportunity for Washington to give wireless broadband roll-out a shot of adrenaline. The 700 MHz spectrum scheduled for auction later this year or early in 2008 has been heralded by you, other policymakers in Washington, wireless carriers and Wall Street as the "beachfront property" needed for wireless broadband to become a reality everywhere. The industry urges your continued commitment to keeping the auction on schedule, with the spectrum allocations as designated by the law.

Second, make sure spectrum which has already been auctioned is useable by the companies that have paid for it and stand ready to deploy it. The industry applauds the efforts of the NTIA to ensure an orderly and quick transition of existing government users off

of the AWS spectrum so that companies that paid billions to the U.S. Treasury during the AWS auction can use the spectrum to provide new wireless broadband services. Anything you can do to expedite the band clearing necessary to make AWS spectrum useable sooner rather than later to provide mobile wireless broadband services will be a great service to the American wireless subscriber.

Third, how Washington addresses and resolves the problems with the universal service fund will also have a profound impact on how quickly advanced wireless services are rolled out across the U.S. at rates all Americans can afford. The wireless industry shares the FCC's concerns about the availability of services in rural areas. Universal service and intercarrier compensation regulation that favor wireline incumbents and fail to adequately support wireless network deployment constitute a significant barrier to the deployment of advanced services in high-cost areas. Making USF funds available to competitive ETCs lays important groundwork for advanced wireless infrastructure. The Federal-State Joint Board's recent Recommended Decision to cap CETC USF funding will harm wireless deployment in rural America and it should not be adopted by the FCC.

Finally, I would like to take a minute here and thank the members of this Committee who demonstrated their commitment to bringing wireless broadband to Americans by signing onto the Analog Sunset letter a few weeks ago, expressing their hope to the FCC that the FCC would not further delay freeing up valuable, deployed spectrum that can be used for broadband right away. I would especially like to note the leadership of Mr. Inslee and Mr. Pickering for their dedication and leadership on this time sensitive issue.

The wireless industry is proud of its accomplishments in deploying mobile broadband, and we support your efforts to develop better information on the availability of

broadband services from all sources. The availability of accurate data is a necessary predicate to sound policymaking. We believe that mapping can be done without placing undue new burdens of wireless carriers or jeopardizing confidentiality of sensitive business data. We look forward to working with you on this legislation.

Thank you again and I would be happy to answer any questions you may have.

APPENDIX A

Selected Carriers' Broadband Deployment

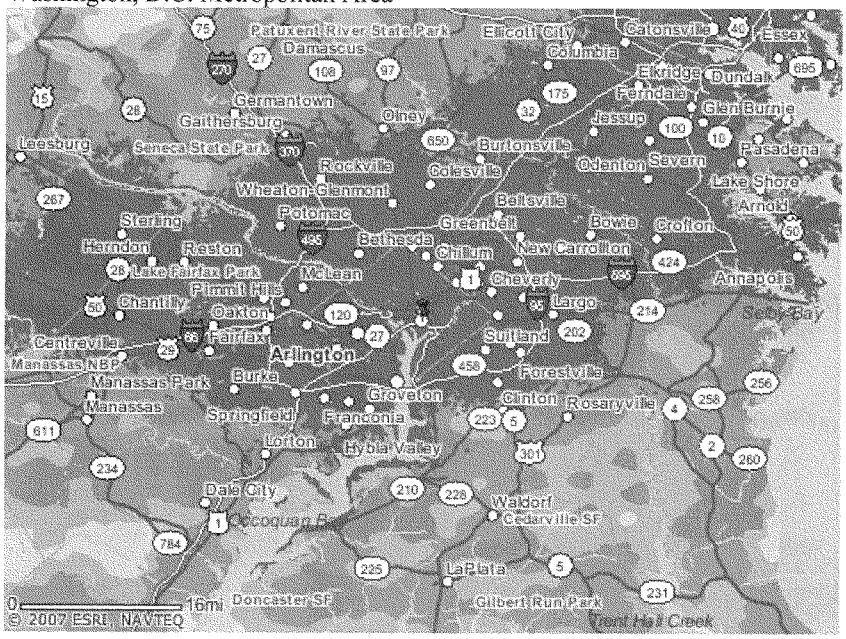
Carrier	Current Availability	Pops	Maximum Speeds	Average Speeds	Commitments
Alltel	EVDO	44+ million	2-2.4 Mbps down	400-700 kbps down	On-going EVDO deployment
AT&T Mobility	HSDPA	Virtually all of top 100 markets	>1 Mbps down Up to 384 kbps up	400-700 kbps down	On-going HSDPA deployment
Verizon Wireless	EVDO	200 million		400-700 kbps down	
Verizon Wireless	EVDO Rev A	More than 145 million		600k -1.4M down 500-800 kbps up	On-going EVDO Rev A deployment
Sprint Nextel	EVDO	More than 204 million	2 Mbps down 144 kbps up	350-500 kbps down 50-70 kbps up	
Sprint Nextel	EVDO Rev-A	193 million	3.1 Mbps down 1.8 Mbps up	600 kbps -1.4 Mbps down 350-500 kbps up	Complete Rev A build-out 3Q07; $2+ billion 4G WiMAX capex by 2008
T-Mobile USA	HSDPA not yet available			100 kbps down for EDGE	$2.7 billion HSDPA capex thru 2008

Source: CTIA-The Wireless Association®, Company Websites, and Press Reports

APPENDIX B

AT&T-Cingular Coverage Viewer
http://www.cingular.com/coverageviewer/

Washington, D.C. Metropolitan Area

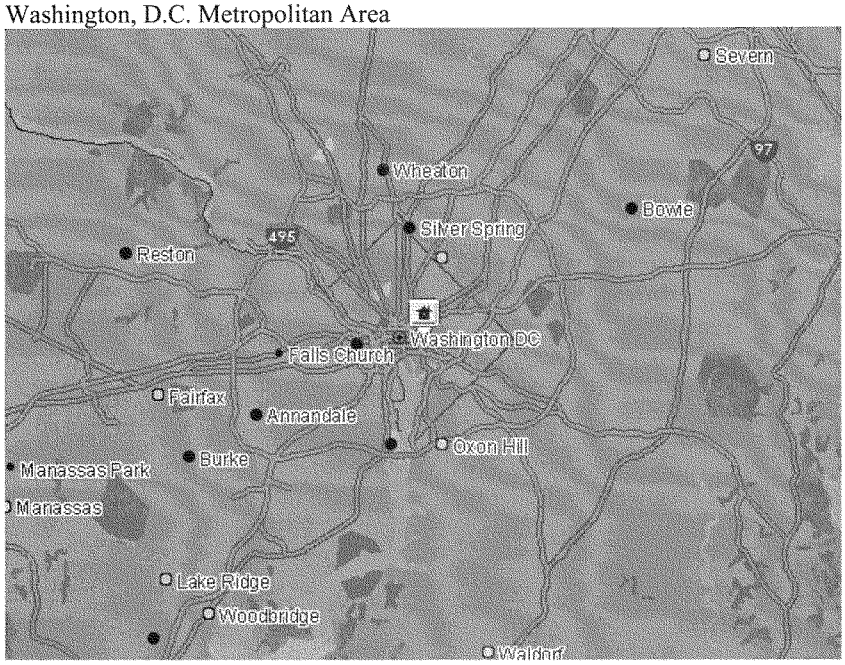


■ 3G Mobile Broadband Coverage Available

Coverage last updated on: April 30, 2007.
Map depicts an approximation of coverage.

Sprint-Nextel Power Network Coverage Tool
http://coverage.sprintpcs.com/IMPACT.jsp?mapzip=20515

Washington, D.C. Metropolitan Area

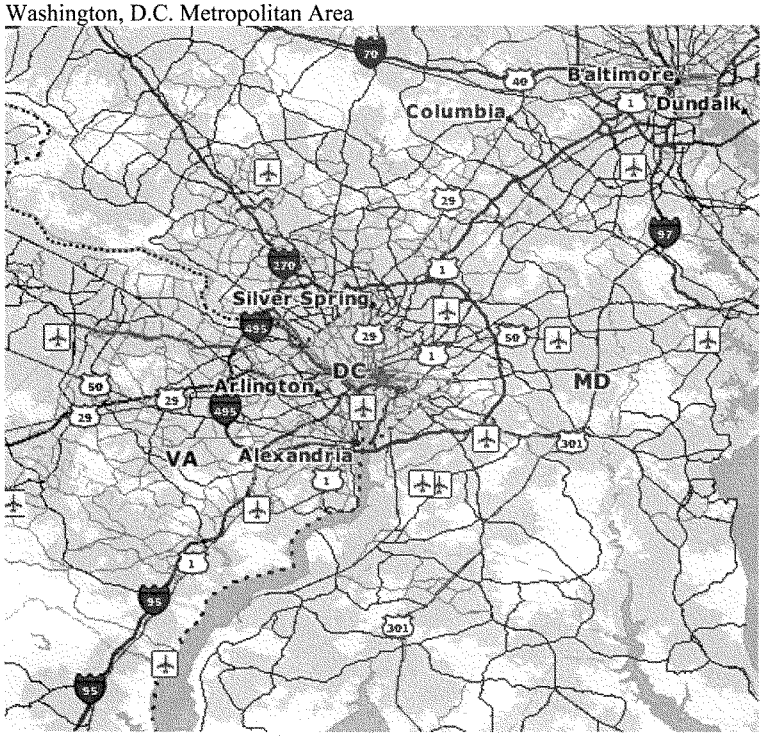


Broadband download speeds
Increased broadband upload and download speeds
Sprint National Network clear voice and data service

Power Vision services and wireless connectivity at broadband-like speeds

Verizon Wireless Broadband Access & VCast Coverage Locator
http://www.verizonwireless.com/b2c/CoverageLocatorController?requesttype=NEWREQUEST

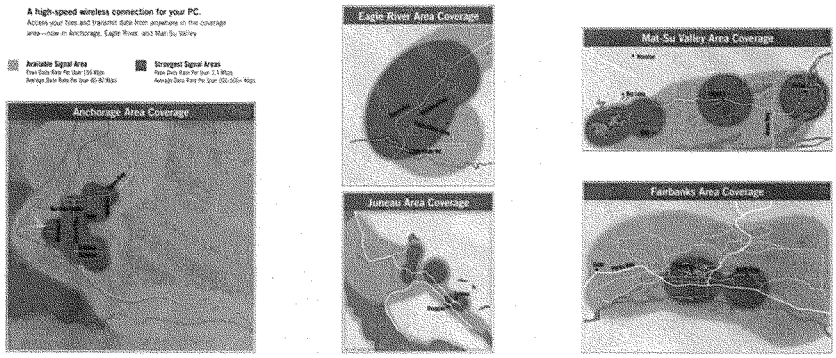
Washington, D.C. Metropolitan Area



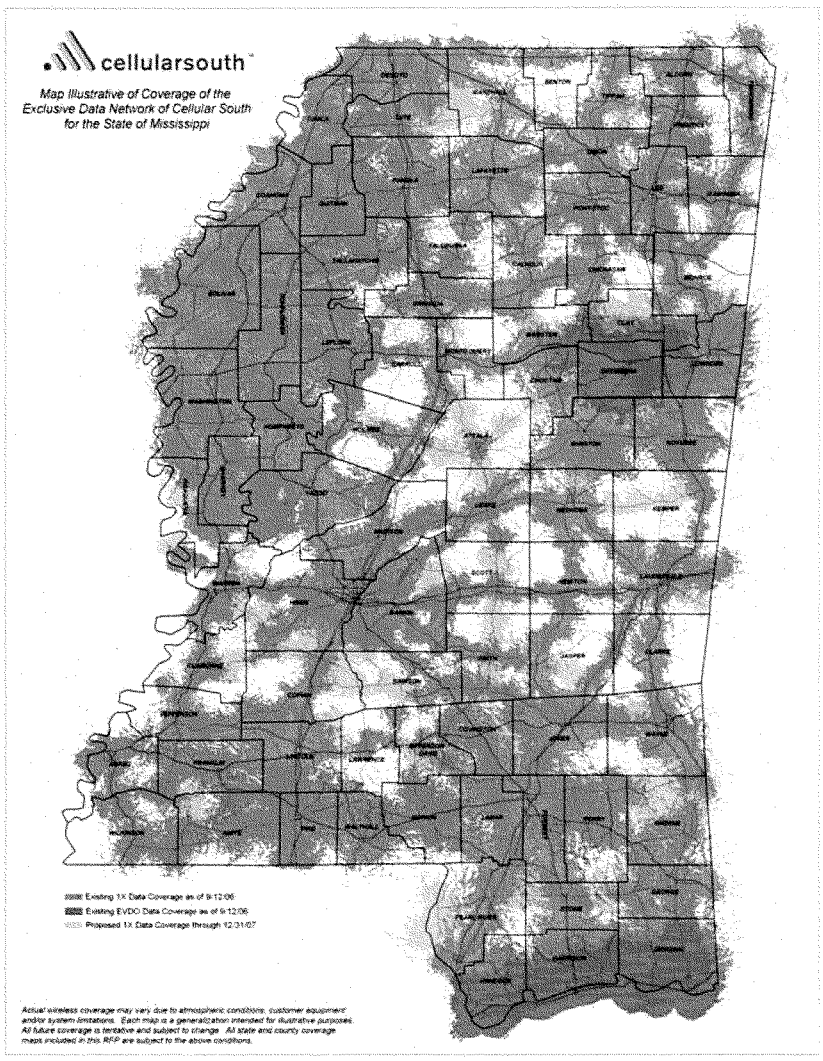
☐ Broadband Access & VCAST (average download speed of 450-800 kbps)
☐ National Access and Enhanced Services (average download speed of 60-80 kbps)

Alaska Communications Systems Wireless Mobile Broadband Area Maps
http://www.acsalaska.com/NR/rdonlyres/64686B8E-9B6D-48B0-A365-CCF9E954EC4D/0/2007MobileBroadbandMaps.pdf

ACS Wireless Mobile Broadband Area Maps



Cellular South Broadband Coverage
http://www.cellularsouth.com/broadband/BroadbandCoverage.pdf



Mr. MARKEY. Thank you, Mr. Largent, very much.

Now we turn to Mr. Walter McCormick. Mr. McCormick is the president and chief executive officer of United States Telecom, which is the trade association representing local telephone companies. He has been a frequent visitor to our committee. We welcome you back. Whenever you are ready, please begin.

STATEMENT OF WALTER MCCORMICK, PRESIDENT AND CHIEF EXECUTIVE OFFICER, UNITED STATES TELECOM ASSOCIATION

Mr. MCCORMICK. Thank you, Mr. Chairman.

Mr. Chairman, Ranking Member Upton, members of the subcommittee, thank you for the opportunity to appear before you today to discuss broadband deployment, particularly to underserved and unserved areas. We share your interest in achieving broader deployment of broadband, and we are pleased that this has become a bipartisan objective, with both Speaker Pelosi's Innovation Agenda and the Senate Republican High Tech Task Force identifying broadband deployment as a key national objective.

Mr. Chairman, you have proposed a map and we think that a map, makes sense. It makes sense to know where Americans have access to advanced telecommunications services and where they do not. It is a practical way of identifying where resources need to be targeted. Most U.S. consumers enjoy unprecedented choice in broadband access. Competition among cable, wireline, wireless and satellite providers has spawned a variety of pricing and service options that benefit consumers. In some areas, there are even free and advertiser-supported broadband offerings. Technological advancements have lowered barriers to entry and have made it possible for anyone who wants to invest and compete in offering high-speed Internet access to do so, and the FCC has embraced market-based policies that have resulted in dramatic investment. Indeed, North American telecommunications companies are projected to spend $70 billion on new infrastructure this year. Today there are more than 1,300 broadband service providers in the United States. Broadband connections have increased more than 16-fold in the past 6 years, and one in three people in the world who now log onto the Internet using a broadband connection do so in the United States. But we all recognize that there are some areas where consumers do not yet have competitive broadband offerings to choose from and some other areas that lack broadband access altogether. This legislation is aimed at pinpointing those areas. If we know precisely where the challenges lie, we can better address them. So Mr. Chairman, I believe that there is complete consensus on the objective. Let me offer then our suggestions for how best to go about developing this map.

First, we think that the more comprehensive the map is, the more useful it will be. So don't redefine broadband and thereby arbitrarily exclude from mapping some areas that are covered at speeds that the FCC has determined are a lot better than dial-up and capable of full-motion video and displaying text as fast as one could possibly turn the pages of a book or turn the channels on a TV. The map should identify all the various offerings and all the

providers so that policymakers can get a full picture of the marketplace.

Second, draw upon what has been shown to work. We are pleased as well that the committee has invited ConnectKentucky to testify today. We too believe that this is a model that builds broadband maps at the State level through effective public-private partnerships and is perhaps the best way to achieve our shared objective.

Third, we too suggest that that the nine-digit ZIP code approach isn't going to give you what you need. These codes do not correspond to service territories. What you need is to identify gaps as was done in Kentucky.

Finally, we agree that an international comparison is important, but if it is to have any utility or relevance whatsoever, it needs to make an apples-to-apples comparison that takes into account geography and demographics.

Mr. Chairman, we look forward to working with you and the committee on this legislation and on initiatives aimed at expanding broadband access and competition. Again, thank you.

[The prepared statement of Mr. McCormick follows:]

Statement of
Walter B. McCormick, Jr.
President and CEO, U.S. Telecom Association
to the
House Committee on Energy and Commerce
Subcommittee On Telecommunications and the Internet

May 17, 2007

Chairman Markey, Ranking Member Upton, members of the subcommittee: Thank you for this opportunity to appear before you today to discuss ways to improve the nation's inventory of existing broadband service. This committee has been at the forefront of helping advance the development and deployment of cutting-edge communications technologies across our nation. USTelecom and its member companies wholeheartedly share your objective of ubiquitous, nationwide broadband. It is a timely moment for the subcommittee to hold this hearing to explore the most effective ways to illuminate the challenges before us in achieving this goal.

USTelecom represents innovative companies ranging from the smallest rural telecoms in the nation to some of the largest corporations in the U.S. economy. Our member companies offer a wide range of services across the communications landscape, including voice, video and data over local exchange, long distance, Internet and cable networks. What unites our diverse membership is our shared determination to deliver innovative voice, video and data services to the consumer—a commitment we know is shared by this subcommittee.

There is growing consensus today about the importance of broadband investment, deployment and adoption. We were pleased to see "affordable broadband access for all Americans" as a component of Speaker Pelosi's Innovation Agenda. Similarly, the Senate Republican High-Tech Task Force is calling for policies that "promote widespread deployment and use of broadband technology." It is encouraging to see that broadband deployment and adoption are bi-partisan objectives, and we believe Congress, the Federal Communications Commission (FCC) and the Rural Utilities Service (RUS) have vital roles to play in advancing these goals.

A Market-Based Regulatory Environment Has Spurred Broadband Deployment

The FCC's recent decisions that have recognized that new technologies present the opportunity to have a consumer controlled marketplace for communications and to move beyond government-managed competition to market-based competition have resulted in broad investment and an explosion of broadband coverage across the nation.

Broadband deployment in the United States has accelerated from just over 4 million broadband lines in 2000 to just under 16 million broadband lines in 2002 to approximately 32 million lines in 2004 to almost 65 million lines in 2006. The lack of regulation on wireless services also has permitted wireless broadband services to explode, as well. In June of 2005, there were almost 380,000 wireless broadband subscribers; in June of 2006, there were more than 11 million. The Commission's recent video franchise order promises to further increase demand for broadband service.

It's important progress. The next wave of broadband innovation holds the promise of significant, life-enhancing advances from health care to the environment to education to economic opportunities. It is critical that these opportunities be accessible to all Americans.

Overall, we are in a strong position today. According to the most recent report of the Organization for Economic Cooperation and Development, the U.S. has the world's largest broadband population. In fact, 1 in 3 people who log onto the high-speed Internet today will do so in the United States. Also promising, our nation's leadership has been established largely through private sector investment from diverse companies. As a result, Americans enjoy the world's most competitive broadband market, with cable, telecom, wireless and even power and municipal ventures now jumping into the fray. All tallied, there are more than 1,323 broadband service providers in the U.S. today.

Against this competitive backdrop, North American telecommunications companies are projected to spend $70 billion on new infrastructure this year. But while broadband investment, service and choice continue to advance throughout most of the country, we have a significant challenge before us in reaching pockets of the country where sparse populations, difficult terrain or other challenges are impeding the arrival of broadband infrastructure.

So this effort we are here today to discuss—gaining greater visibility into the state of broadband deployment throughout the country—is a very important one. It's important to policy makers. It's important to service providers who share the goal of ubiquitous nationwide broadband deployment. I am grateful to have this opportunity to present our thoughts on how to make this process as efficient and accurate as possible—and to ensure it is integrated with a course of action for getting at these unserved areas—at affordable rates for the customer—leveraging the collective will and determination we see in abundance in both the public and private sectors today.

"Broadband Census of America Act of 2007"

So we appreciate this opportunity to comment on the "Broadband Census of America Act of 2007," and we stand committed to working with this committee to fashion a bill that will produce a useful tool for policy makers in helping to target federal resources to improve broadband deployment.

First, we recommend the FCC assessment not be confined to a new definition of high speed or advanced telecommunications capability. We believe such an approach would reduce rather than increase visibility into the scope and nature of the challenge before us. The nation would be better served by gathering a complete picture of the state of broadband deployment throughout the nation. We feel that this can best be achieved by collecting information on the variety of broadband services available in the United States today, using the existing definition as a floor. The biggest impact of a more narrow definition would be on satellite and terrestrial wireless (including municipal Wi-Fi) systems. To consumers in very rural areas, the resulting maps would falsely indicate that they have no broadband availability – discouraging them from

seeking out services that would allow them to enjoy real-time voice communications, email, Web surfing and full-motion video.

We also agree with Chairman Markey that an international component to the analysis would be useful. We simply recommend that clarifying language be added to ensure "apples to apples" comparisons of areas of similar topography, as well as population size and density.

We recognize that that existing FCC data that charts broadband deployment by five-digit zip code may be inadequate to gauge the state of broadband deployment today. However, we suggest that graduating to nine-digit zip codes will offer little, if any, added clarity. These so-called "Zip+4" designations exist for the sole purpose of ensuring efficient mail sorting and delivery. They are constantly in flux and tailored to meet the bulk mailing needs of, for example, an office building or an individual high volume recipient of mail. They do not correspond to any commonly recognized geographic boundaries, such as state or county lines, Congressional districts or service territories. Given this fact, Zip+4 likely over weights high-density and business addresses—blurring a picture we all want to see as clearly as possible.

We are pleased the Committee has invited Connect Kentucky to testify today as we believe that its program, which relies on public-private partnerships, can serve as a framework for a nationwide plan to both map and improve broadband deployment.

The Connect Kentucky model is a roadmap for the building of accurate, state-wide, broadband deployment maps. Connect Kentucky's first objective was to map broadband availability in the whole state. Then it created technology teams in each community that lacked broadband. These teams looked at computer ownership, technological literacy, and other factors to increase demand for broadband. At the same time, the teams worked with broadband providers to match new demand with new broadband deployments.

By the end of 2007, Kentucky will go from having one of the lowest broadband subscription rates in the country to having broadband available to 100% of its households. We believe that this approach can and should be replicated across the nation, and that the broadband mapping program envisioned by this legislation should support, rather than duplicate or supplant, these efforts. We believe this can be achieved in two ways: First, through simplification—positioning NTIA to establish the template and act as the repository of state broadband mapping efforts. Second, through strategic expansion—authorizing NTIA to dispense grants through the states to support public-private partnerships, similar to Connect Kentucky, that can develop state-level broadband service maps. In addition, the committee may want to consider funding community action plans to strive toward universal broadband deployment. We would also recommend that language be added to make clear that public/private partnerships acquiring sensitive company information be subject to confidentiality safeguards – something that reflects the best practices established by the Connect Kentucky process.

Mapping is one important component of a comprehensive strategy for enhancing U.S. broadband deployment. There are, of course, a number of additional steps that can help identify a course of action to fill in the gaps and make this truly a broadband nation:

Tax Policies To Encourage Broadband Deployment

Congress can permanently extend the Internet Tax Moratorium; allow for faster depreciation of broadband equipment and fiber; and create a tax credit for the deployment of broadband equipment and fiber.

Congress first passed the Internet Tax Freedom Act (ITFA) in 1998. The moratorium was extended by Congress in 2001 and 2004, and now is set to expire on Nov. 1, 2007. The moratorium needs to be permanently extended to ensure that this critical component of the American economy is not the target of excessive taxes imposed by state and local governments. If the moratorium is allowed to lapse, consumers will face a significant tax increase for Internet access services—something that is antithetical to the goal of affordable broadband access for all Americans.

USTelecom was joined by NCTA and CTIA in a letter to all House members in support of H.R.743, bipartisan legislation introduced by Representatives Anna Eshoo and Bob Goodlatte. I encourage all members of the subcommittee to consider cosponsoring this legislation and urge the House take up this important legislation before its expiration in November.

The RUS Broadband Program -- Modest Changes Could Produce Dramatic Results

In its relatively brief history, the RUS broadband loan program has achieved some successes. But we believe that, with modest changes largely based on the successful RUS telephone program, these broadband efforts could accomplish even more.

Recently, USTelecom appeared before the House Agriculture Committee to make recommendations for inclusion in the Farm Bill that would advance our collective goal of helping the nation achieve universal broadband penetration. We recommend that the program:

1) Better target areas currently not served;
2) Enhance incentives for investment in areas not served;
3) Expand program eligibility;
4) Improve processing at USDA; and
5) Explore public-private partnerships, like Connect Kentucky.

Mr. Chairman, in closing, let me again thank you for calling this important hearing. We believe that efforts to better illuminate parts of the country where broadband has yet to arrive are an important piece of the puzzle of achieving universal broadband deployment. Of course, our shared ultimate objective is making such a map unnecessary. Truly universal broadband is a classic example of a national priority that takes both public and private effort, commitment and innovation to achieve. We are here today to demonstrate our commitment, our openness to working together across party lines to better understand the challenge before us, and, most importantly, to do something about it that advances our nation, our economy and the quality of life of all Americans in the broadband era. Thank you.

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Mr. MARKEY. Thank you very much.

Our next witness is Dr. George Ford. Dr. Ford is the chief economist at the Phoenix Center for Advanced Legal and Economic Public Policy Studies. We welcome you back to the committee, Mr. Ford. Please begin.

STATEMENT OF GEORGE FORD, CHIEF ECONOMIST AND EDITORIAL ADVISORY BOARD MEMBER, PHOENIX CENTER FOR ADVANCED LEGAL AND ECONOMIC PUBLIC POLICY STUDIES

Mr. FORD. Glad to be back. Thank you, Mr. Chairman, Ranking Member Upton and members of the subcommittee. Good morning and thank you for inviting me back to testify before you today. Three weeks ago I had the honor of testifying before this subcommittee on the most recent OECD Broadband Rankings report. While there is certainly a great deal of controversy surrounding those rankings, we all agree that better data is needed.

As a reminder to the subcommittee, the Phoenix Center is a nonprofit 501(c)(3) organization that publishes academic research on economics and the telecommunications industry. The Phoenix Center makes it a policy not to endorse or support any particular piece of Federal or State legislation or proposed regulation.

My comments today are from the perspective of an economist that uses Government data to research the communications industry. I have written and published numerous papers on communications markets, almost all of them empirical in nature. So you might say that I have a vested interest in ensuring that the data the Government collects and provides are complete and useful for statistical analysis. I welcome and applaud this subcommittee's efforts to improve the Government's data collection abilities. I can summarize my suggestions into three categories: completeness, comparability and consistency.

First, we need to make sure that the data that we collect are relevant data and make sure this data is complete. Clearly, ZIP code data does not provide us a complete picture of broadband availability. Each ZIP code represents approximately 30,000 people on average, yet it takes only one reported broadband connection among those homes for the FCC to consider that ZIP code served by that provider. Clearly, that is inadequate. We should shrink our unit of measurement to render a more detailed and accurate picture of broadband availability. The unit of measurement needs to have a rational basis and be somewhat stable over time. ZIP codes were designed for optimal routes for mail carriers and are subject to change any time based on changes in letter mail volumes. This is particularly true of the ZIP+4 codes referenced in our discussion draft.

We also need to include all types of broadband in the collection effort regardless of technology or provider. The FCC publishes a small mountain of data and has an entire division devoted to the collection and dissemination of data, but most of that information comes from only one industry segment, the local exchange companies. To have a complete picture of how broadband infrastructure is developing, we need all providers to participate, regardless of size, geographic location, ownership structure or technology.

Completeness also dictates that we need information on the different types of speeds and broadband services that are available. Today many scoff at the FCC's definition of 200 kilobits as high-speed service, and the discussion draft makes a different choice: 2 megabits downstream and 1 megabit upstream. In my opinion, the definition of high speed or broadband should be flexible and cover a range of offerings beginning at the 200 kilobits offering. From an empirical perspective, having a single threshold, particularly one that is high, forces researchers to incorrectly assume that areas that do not meet that threshold have no broadband service at all. A single threshold creates a statistical dichotomy that does not exist in reality. Further, the proposed upstream threshold will likely exclude many current deployments of mobile broadband, and that exclusion is significant.

From a policy perspective, the distribution of availability in terms of service offerings is almost as interesting as availability itself. The data also needs to be collected and disseminated in a manner that allows it to be compared in a way that has statistical relevance. I am concerned about the proposal in section 4 that has the broadband map composed of data collected by potentially more than 50 different State or local governments. Guidelines should be provided so that everyone is collecting and disseminating similar data that allows for statistical comparison. Otherwise the data will not provide researchers like me with valuable, useful information.

What is most troubling to me about the proposal is its failure to recognize that ZIP codes, even nine-digit ZIP codes, simply cannot be linked sensibly to demographic data. While researchers often crudely assign census demographic data to ZIP codes, in doing so we are not able to utilize all the best demographic information that the Census Bureau collects. Narrowing the geographic bounds of the analysis to ZIP+4 level may seem sensible, but it is insufficient, because as far as I can tell, there is no ZIP+4 demographic data available from any source. Researchers would be able to do very little with ZIP+4 data. We could make no claims about the relationship between availability and income, race, age, population density and so forth. These relationships are obviously important from a public policy perspective.

Mr. Chairman, many, if not all, of the policy questions, this subcommittee considers are empirical questions and empirical questions can only be answered by empirical means. Better data will lead to a more disciplined approach to broadband policy that will render better results and eliminate the waste of resources devoted to quibbling over bad ideas.

I thank you for the invitation to testify, and I welcome any questions that you may have.

[The prepared statement of Mr. Ford follows:]

Testimony of George S. Ford, Ph.D.

Chief Economist, Phoenix Center for Advanced Legal & Economic Public Policy Studies

House Committee on Commerce and Energy Subcommittee on Telecommunications and the Internet

Hearing on H.R. _____, A Discussion Draft Addressing Broadband Mapping and Data Collection

May 17, 2007

I. Introduction

Mr. Chairman, Ranking Member Upton, and members of the Subcommittee, good morning and thank you for inviting me back to testify before you today. Three weeks ago I had the honor of testifying before this Subcommittee on the most-recent OECD Broadband Rankings report. While there certainly a great deal of controversy surrounding the broadband rankings published by the OECD and ITU, I think we all agree that better data is needed with regard to broadband availability and subscription in this country and abroad. This hearing today is the result of an effort to make that happen.

As a reminder to the Subcommittee, my name is Dr. George S. Ford, and I am the Chief Economist of the Phoenix Center for Advanced Legal and Economic Public Policy Studies, a non-profit 501(c)(3) organization that studies broad public policy issues related to governance, social and economic conditions, with a particular emphasis publishing academic-quality research on the law and economics of telecommunications

and high-tech industries. Our research agenda is consistently targeted at providing policymakers information about the important role that pro-entry policies must play in the communications industry. We have written over thirty papers on telecommunications policy in the last nine years, many of which have been published in academic journals. Moreover, we make all of our research—as well as rebuttals by those who do not agree with us—available for free at our website, www.phoenix-center.org.

Before beginning my testimony today, I wish to make it clear that the Phoenix Center makes it a policy not to endorse or support any particular piece of federal or state legislation or proposed regulation. Our mission is not to tell policymakers *what* to think about an issue but *how to think* about it. As such, our contributions to communications policy are decidedly more analytical than most, and we refuse to ignore the institutional realities and economic constraints of the communications business.

My comments today are from the perspective of an economist that uses U.S. Government data to research the communications industry. Before and since receiving my Ph.D. in economics from Auburn University in 1994, I have written and published numerous papers on communications markets, almost all of them empirical in nature. I have used in my various studies data made available by the Federal Communications Commission, the Census Bureau, the Bureau of Labor Statistics, the Bureau of Economic Analysis, internal corporate information, and other government and private sources. As such, I welcome and applaud this Subcommittee's efforts to improve the government's data collection abilities, thereby creating the opportunity for the improved empirical analysis of broadband services and policy.

There are a lot of people giving testimony today, so I will get right to the point. With respect to the collection and mapping of broadband availability data, there are a few things that concern me, and I can summarize these as three categories: completeness, comparability, and consistency. The most vital issue, in my opinion, is that the collection and dissemination of the data not be focused solely on generating maps. Maps are pretty, no doubt, and can be informative with respect to availability. In that purpose, they are exceedingly valuable. But to focus solely on maps precludes many public policy innovations that will arise out of the detailed statistical analysis of the underlying data after it is linked with demographic and other geographic information.

II. Completeness

The primary goal of improving our data collection ability is to better measure the availability of broadband services across the United States so that we can make better informed policymaking decisions. For this reason, we need to make sure we collect the *relevant* data, and to make sure this data is complete.

For example, much has been said about mapping geographic availability by five-digit ZIP codes. Under current rules, a carrier must report the availability of service for each ZIP code in which it has at least one high speed subscriber. However, the ZIP code data suffers because it does not provide us a complete picture of broadband availability. Each ZIP code represents approximately 30,000 people or about 12,000 households, yet it only takes one reported broadband connection among those homes for the FCC to consider that ZIP code "served" by that provider. This clearly is inadequate and at best

this ZIP code data can only provide us trend information. Since the ZIP code data now indicates near complete availability, which is widely accepted as being incorrect, it is now time to shrink our unit of measurement to render a more detailed and accurate picture of broadband availability.

For the broadband data collection effort to be complete, we need more granular data collection. In addition, the unit of measurement needs to have a rational basis and be somewhat stable over time. ZIP codes were designed for optimum routes for mail carriers and are subject to change at any time based on changes in letter mail volumes. This is particularly true of ZIP+4, or the nine-digit ZIP codes that are referenced in the Discussion Draft. The only reason for the +4 is to help sort mail—not to assist policymakers in assessing economic development and broadband deployment. I will discuss this issue further below.

In addition, to have this effort be complete, we need to include *all* types of broadband in the collection effort, regardless of technology or provider. Every year, the FCC publishes a small mountain of data and has an entire division devoted to the collection and dissemination of data. The FCC publishes useful data in its semiannual Local Telephone Competition and High Speed Services for Internet Access Reports, the annual Trends in Telephone Service, Telephone Subscribership Report, the Telephone Penetration Report, the Local Operating Company Quality of Service Report, the Reference Book on Rates, Price Indices, and Expenditures for Telephone Service Report,

Universal Service Support Monitoring Reports, International Traffic Data Reports, the biennial the Statistics of Common Carriers, and the Cable Television Rate Surveys.[1] In addition, the FCC collects, maintains and distributes highly-detailed ARMIS (Automated Reporting Management Information System) reports on service quality and network infrastructure for local exchange companies. There is a lot of useful information in these reports for researchers and economists. But you will note that most of that information comes from only one industry segment—the local telephone companies, who have been traditionally regulated. For broadband service, we need *all* providers to participate—regardless of size, geographic location, ownership structure (*i.e.*, public and private entities) and technology deployed—if we are to have a complete picture of how this vital economic infrastructure is developing.

Completeness also dictates that we need information on the different types and speeds of broadband service that are available. Today many scoff at the FCC's definition of 200 kbps as "high speed" service, but when the FCC made that definition in 1999 that service was more than adequate for e-mail and basic Web browsing, the two dominant Internet applications at the time.[2] The Discussion Draft makes a different choice—it chooses to report 2 Mbps downstream and 1 Mbps upstream. However, as a

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[1] For recent releases of several of these reports, *see* http://www.fcc.gov/wcb/iatd/stats.html.

[2] *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Report, 14 FCC 2d 2398 (Feb. 2, 1999) at ¶ 20 ("We have initially chosen 200 kbps because it is enough to provide the most popular forms of broadband—to change web pages as fast as one can flip through the pages of a book and to transmit full-motion video.").

person who spends his time analyzing this data carefully, I believe focusing on a threshold definition simply mires the debate into muckraking. In my view, the definition should be flexible, and cover a range of offerings, including 200 kbps offerings. Indeed, focusing on whether the current definition of 200 Kbs is "too low" or whether we should change to a higher definition misses the point: the purpose of improving our data collection process is not supposed to set an arbitrary point where once achieved we can rest on our laurels; instead, the data collection process is supposed to help inform our decisions in a dynamic process on how we should formulate pro-entry policies to encourage investment and deployment of advanced broadband deployment to all Americans.

Indeed, choosing a specific and singular threshold for what constitutes "high speed" inevitably locks you in to the technology of the day, and likely ignores the wide range of broadband services available that provide important connectivity for consumers and businesses. For example, the proposed 1Mbps upstream will likely exclude all the new deployments of mobile broadband. We should generally expect mobile broadband to be of lower speed than fixed line broadband, but that does not mean we should exclude it from the count since mobile broadband is a very valuable service. Further, from an empirical perspective, having a single threshold, particularly one that is too high, forces researchers to assume that areas that do not meet that threshold have no broadband service at all. Clearly, that would be an error, and therefore biases the results of the statistical testing. In order to maximize its value, the broadband data should include statistics on a range of speeds beginning at the 200 kbps level if only to allow us to continue to use the historical data in a meaningful way.

III. Comparability

Perhaps the greatest defect in much of the broadband data that is collected today, particularly that summarized by the OECD, is the lack of comparability. In the testimony I provided this Subcommittee last month I gave you several examples about how the OECD broadband statistics are essentially comparing apples to oranges, often with absurd results. While lots of data is nice to have, if it is not possible to compare the statistics from one set of data to another intending to measure the same thing, then the data is near worthless.

As a result, I am concerned about the proposal in Section 4 of the Discussion Draft that the broadband map will be composed of data collected by potentially more than fifty different State or local governmental to collect data pursuant to NTIA grants. This collection may (or may not) be an efficient way of obtaining this data, but guidelines should be provided so everyone is collecting something that is sufficient similar for statistical comparison. Otherwise, the data will not provide researchers like me with valuable and useful information. Instead, we run the risk that its only use will simply be as a "feel good" marketing brochure for U.S. Government or particular state or local governments with "rank" envy that may create an incentive to goose their numbers.

In addition, it is not clear to me that codifying international comparisons, as Section 2(b) requires, is a sensible approach. The proposal to collect detailed availability data in this country is not served well by comparing the results to some unspecified data collection effort elsewhere. We want broadband to be available pretty much everywhere

in this country. The meaningful target is, therefore, near 100% availability. Whether or not Iceland has 10% or 100% coverage is irrelevant. I believe our data collection resources should be directed on availability in the United States, which is a big enough task in itself. International comparisons are inevitable regardless of legislation or regulatory mandates, and in my opinion, not very meaningful.

IV. Consistency

From my perspective as a statistician and researcher, what is most troubling about the proposal is its failure to recognize that ZIP codes—even nine-digit ZIP codes—simply cannot be linked sensibly to demographic data. While researchers like me often crudely assign census demographic data to ZIP codes, in doing so we are not able to utilize all of the best demographic information that the Census Bureau collects. Indeed, the Census Bureau has observed "There is no correlation between U.S. Postal Service ZIP Codes and U.S. Census Bureau geography."[3] Naturally, given the dissatisfaction with the high level of aggregation in ZIP code data, narrowing the geographic bounds of the analysis, say from the ZIP to ZIP+4 level, seems like a sensible proposal. However, as far I can tell, there is no ZIP+4 demographic data available from any source. As a result, the Discussion Draft would collect and disseminate information on ZIP+4 code areas and researchers like me would be able to do very little with it. We could make no

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[3] U.S. Census Bureau, Answers to Frequently Asked Questions about Census Bureau Geography, Maps and Mapping Engines (visited May 15, 2007) (available at: http://www.census.gov/geo/www/tiger/tigermap.html).

claims about the relationships between availability and income, race, age, population density, and so forth. This is severely limiting for the empirical analysis of broadband and broadband policy.

Perhaps the overarching issue here is that while maps looks nice and are useful in some respects, the most important public policy innovations will not arise from maps but from the analysis of the underlying data itself. Thus, it is critical that the data be collected and/or disseminated in a form that allows it to be easily linked to the best and most detailed demographic data available. Modern mapping software can present the data in wide range of geographic units, so making very specific decisions on how the data is collected or presented may not be necessary. But, for the sake of research, the underlying data should be made available publicly and at no charge to researchers in a format that can be linked to demographic data.

For example, it may make sense to disseminate the underlying data in a Census Block Group format. Some of the sophisticated cost models for telecommunications plant provide cost estimates at this level of aggregation, and there are obvious opportunities for research by combining those data sets. That said, converting the data to Census Block Groups will still tend to exaggerate availability just like the ZIP code data, but to a far lesser extent, as the target level for population of a Census Block Group is 1,500. Thus, the aggregation problem is reduced by 20-times when moving from ZIP codes to Census Block Groups. Importantly, data *collection* itself need not be tied to any particular geographic unit. My proposal to use Census Block Groups is purely a matter of data dissemination.

In any case, data collected by states and local governments for the mapping project by Section 4 should be collected in the same manner, so it also can be linked directly to the valuable demographic data collected by the Census Bureau. Moreover, it should be required that the data be made available to researchers promptly and in an easily usable, non-proprietary format. Confidential information can be stripped from this data so as to protect company interests yet still provide researchers like me the tools to perform our own analysis. The provision of summary reports by the agency is, in my view, insufficient, because the agency can have mixed motives when making reports on a topic as crucial to our economic future as broadband services. Summary reports likewise rob researchers of the ability to quantify important relationships about broadband and economic activity using high frequency data with significant variation in demographic and economic characteristics. A great deal of information is lost in aggregation.

V. Suggestions and Conclusion

As I said before, the Phoenix Center does not take positions on legislation or lobby. But what we do is write academic quality reports on communications industry topics, so you might say we have a vested interest in ensuring that the data the United States government collects and provides for broadband services are complete and useful for this purpose.

Therefore, while I have raised some concerns about the Discussion Draft, I welcome this Subcommittee's efforts to rationalize the broadband data collection process. Indeed, expressing the political will to collect more data might have a positive

impact in and of itself. For example, it is my understanding that every time the FCC wishes to collect data from industry or change the way it collects data from industry, it must obtain the approval of the Office of Management and Budget pursuant to the Regulatory Flexibility Act of 1995. To obtain OMB approval, the FCC must show that the proposed reporting requirement minimizes burdens on small businesses and entities. Out of concern that these reporting requests will be met with skepticism, the FCC in both Republican and Democratic Administrations seem to have shied away from proposing substantial changes to its data reporting requirements. Moreover, any new information that is requested, like the broadband ZIP code data, must be tailored so as not to burden small business entities.

As a result, while the FCC each year publishes a small mountain of data, that data is a bit of a crazy quilt. This is not the fault of FCC staff, many of whom I know and have worked with and for whom I believe are of very high caliber. But the current process builds in a disincentive not to change or alter the forms that have been used for years. As a result, the FCC still collects information on the cost of artwork that local telephone companies purchase for their headquarters—but it does not collect information on fiber deployed to secondary schools. These failures can lead to regulatory leaps of faith. For example, the FCC has been confronted several times in the last few years with issues relating to competition in the special access market, that is, fiber connections to business buildings. The FCC does not have access to special access network information of competitive providers of these connections. As a result, it must rely upon parties to submit this information, sometimes under seal, in comments or ex parte communications that are, by definition, self-serving.

Let me summarize my suggestions for this effort:

First, all data collected must apply to all industry segments. Given the Regulatory Flexibility Act, I believe that the FCC would need strong support from Congress to make sure that this data is complete and comprehensive. It would seem logical that collecting less data on the artwork that hangs on the walls of telephone companies and putting those resources into mapping broadband availability would be a useful endeavor.

Second, broadband data should be collected and reported based on different "tiers" of bandwidth and by technology. Moreover, the pool of entities required to report such data must be expanded to all broadband providers, regardless of size, location, ownership structure, or technology deployed.

Third, consistency in data collection and presentation is of paramount importance. I am concerned about provisions in the Discussion Draft that would have fifty different entities collecting and compiling information—one for each state—that would then be placed on a "broadband map" of sorts. Consistent data collection and quality permits empirical research, and this system runs the risk that the data collected will be of little use other than as a public relations gimmick. Guidance on form and substance on what is collected and how it is presented should be explicit.

Fourth, broadband data should be collected on a granular basis that facilitates demographic analysis. It should not be enough to know where broadband service is and is not available—we should want to study the demographic reasons *why* service may or may not be available. The ZIP code data that the FCC currently collects, and the ZIP+4

data that the Discussion Draft proposes that the FCC and NTIA collect, do not serve this purpose. In my view, information should be collected on, or at least assignable in a simple way, to Census Block Groups.

Fifth, researchers should have direct access to the raw data, or as near to raw as possible, so we can pursue our own studies, test hypotheses and develop our own conclusions.

In conclusion, we all can agree that the expansion and modernization of our broadband infrastructure is a critical component of the nation's economic growth potential. But to make sound decisions, we must have sound data, sound empirical analysis, and sound interpretation. Many, if not all, of the policy questions you ask yourselves are empirical questions, and empirical questions can only be answered by empirical means. Better data will lead to a more disciplined approach to broadband policy that will render better results and eliminate the waste of resources devoted to quibbling over bad ideas.

Mr. Chairman, thank you again for the invitation to testify today. I would welcome any questions that you may have.

Mr. MARKEY. Thank you, Mr. Ford, very much.

And now we turn to the idea which has been the genesis of the hearing and all of this interest which has now unfolded nationwide. We now turn to the State of Kentucky and Mr. Brian Mefford. He is the president and chief executive officer of ConnectKentucky. In that capacity, he helped to lead efforts to ensure that broadband is deployed to all citizens of Kentucky. We welcome you, sir. Whenever you are ready, please begin.

STATEMENT OF BRIAN MEFFORD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CONNECTKENTUCKY

Mr. MEFFORD. Thank you, Mr. Chairman and Ranking Member Upton and all members of the committee. I greatly appreciate the opportunity to be with the committee today and to have the opportunity to speak to these important issues. I appreciate all the compliments this morning and hope to be able to have my testimony live up to reach that bar that has been set.

Mr. Chairman, we agree with you that the Nation needs to know where it stands with regard to broadband deployment. We need a national strategy that shows us not only where broadband is but where it can take us. The Nation deserves a model that leverages the best of both the public and private sectors for the sake of strong communities.

As I said, the compliments this morning have been plentiful, and they are appreciated. However, I have to tell you that 3 years ago things in Kentucky were starkly different. Relative to other States, Kentucky consistently ranked near the bottom in terms of broadband indicators. The Commonwealth was struggling to use technology to address traditional challenges such as health care, education, delivery of Government services and so forth. Jobs in traditional industries were declining at an alarming pace. Inadequate broadband availability could be traced to much of the State's inability to complete in areas critical in a knowledge-based economy. Significantly though, we also identified that broadband availability was not the only part of the problem. The other half of the equation was related to actual use and technology literacy related to the enabling technologies of broadband.

In terms of availability, there were a series of issues that needed to be addressed. First, the regulatory environment was not conducive to private investment in Kentucky at that time. The cost of regulation was high, and the resulting uncertainties meant little investment was occurring in higher risk areas. Second, very little data existed to allow us to identify the specific broadband gaps in Kentucky, resulting in ill-informed public policy and no means for accurate strategic planning. Third, the business case for providers to enter unserved areas was challenging at best. The cost of entry was often prohibitive, and take rates were expected to be extremely low.

So Mr. Chairman, leveraging the collaborative structure of a public-private partnership, ConnectKentucky developed and implemented a plan to address Kentucky's broadband challenge, and following are the five most salient features of that plan.

First, it is a market-driven approach. ConnectKentucky has relied heavily on market forces to accelerate broadband availability,

competition and adoption. We supported a deregulatory environment that has been embraced by all types of providers as conducive to increased investment in unserved areas.

Second is the mapping component. To create a picture of broadband availability, ConnectKentucky created broadband inventory maps. These maps helped promote the use of currently available service while also identifying where specific gaps remained. Data are collected from all providers and depict service availability based on technology type. Service level data is integrated into a GIS format that allows for the layering of other data sources and enables the most accurate determination of household-level detail. Data layers provide additional demographic and community information to identify things such as density, planned development and existing public assets such as water towers and other existing assets that can be used in planning for extended broadband coverage.

The third salient feature is data collection, analysis and reporting. In addition to maintaining broadband maps, ConnectKentucky serves as Kentucky's broadband data clearinghouse, collecting data from numerous surveys and sources to, one, advocate for individuals and businesses who need broadband; second, to generate market intelligence for unserved areas; third, to provide a centralized resource for public policy; and fourth, to understand and interpret consumer interest and trends.

The fourth salient feature of this plan has been demand creation and aggregation. In each Kentucky county, we have established what we call Local eCommunity Leadership Teams. These teams assemble as a cross-section of the community to create technology strategies across multiple sectors for that specific county. Local teams generate and aggregate demand by identifying ways to better use technology locally.

The fifth salient feature of this plan has been the public-private approach which has served as a middle ground. The public-private partnership approach is flexible and customizable to local realities. It allows for the development of initiatives that solve deployment challenges locally, that promotes the value of technology in a relevant context, improves technology literacy, and drives technology adoption.

The bottom line of the ConnectKentucky model, Mr. Chairman, is that it accounts for both supply and demand realities in a manner that respects consumer needs and encourages market-based results with an accurate and detailed picture of unserved areas coupled with efforts to improve take rates in all areas. Private sector providers have invested aggressively in Kentucky, and consumers and communities have reaped the benefits. I am glad to tell you that the results bear out the merits of this model, and we can talk more about that in detail, but as was mentioned earlier, Kentucky has gone from 60 percent broadband availability to 93 percent in the past 2½ years.

Mr. Chairman, no doubt this is a challenge of historical proportions, and just as previous times called for a national response to the need for railroads, highways, electricity and telephone service, the broadband challenge calls for an aggressive and comprehensive response that will ensure that America remains the dominant player in the global economy.

Thank you, Mr. Chairman.
[The prepared statement of Mr. Mefford follows:]

STATEMENT OF BRIAN R. MEFFORD

Chairman Markey, Ranking Member Upton and members of the committee:

Thank you for the opportunity to speak with you today regarding the important issues related to broadband mapping and data collection. Connected Nation is a national non-profit organization dedicated to addressing the broadband challenges facing the United States. Connected Nation is the parent company of ConnectKentucky, our Kentucky-based organization that has served as the "demonstration project" for state-enabled broadband initiatives. It is the "Kentucky story" that I'm here to share with you today. Kentucky stands as the only State to date with an accurate map of its broadband infrastructure. This is our story.

Four years ago, Kentucky faced the same challenges that are all too common in states and communities across the country. The Commonwealth was struggling to use technology-centered solutions to address traditional challenges related to education, healthcare, and the delivery of government services.

On the economic development front, jobs in manufacturing, farming, and mining were declining at an alarming pace, with little evidence that lost opportunities were being replaced with new technology-centric ones.

The indicators and impacts of Kentucky's technology troubles were not hard to identify. Kentucky consistently ranked low among states in terms of broadband availability and technology literacy. The number of high-tech companies doing business in the Commonwealth relative to other states was extremely low, and college graduates were leaving in droves, creating a troubling "brain drain" effect.

The Challenges: The reality of Kentucky's technology challenge was troubling indeed. We realized that the foundation of broadband infrastructure was not adequate for creating solutions that could address the opportunities of a new day: not adequate to provide widespread access to telemedicine, distance learning and e-government; not adequate for growing or attracting entrepreneurs and industry; not adequate for providing more opportunities to our communities whose children were leaving to pursue opportunities elsewhere, never to return.

It was clear that the inadequacy of Kentucky's broadband infrastructure could be traced to much of the state's inability to compete in areas important in the knowledge-based economy. Broadband infrastructure had been built into the state's more populous areas, leaving more rural areas unserved. The lack of service not only created the well-termed "digital divide" for rural residents, it also made it impossible to develop statewide policies that depended upon access to broadband. For instance, a statewide e-health initiative was not realistic when nearly half of the state's physicians could not connect to broadband.

Significantly, it was discovered that broadband availability was only part of the problem. The remainder of the challenge related to the actual use of broadband-related technology. Any resulting turn-around strategy had to be comprehensive in nature: addressing both supply and demand side challenges.

ConnectKentucky set out to identify the barriers that were inhibiting broadband availability and use. In terms of availability there were a series of issues that needed to be addressed. First, very little data existed to allow us to identify the specific extent of the broadband gaps in Kentucky. Providers didn't know, policy makers didn't know and communities themselves didn't know. Second, the regulatory environment was not conducive to private investment, causing little investment to be made in more risky areas. Third, the business case for providers to enter unserved areas was challenging at best: the cost of entry was often prohibitive and take rates were expected to be low.

Challenges related to the use of technology included: lack of appreciation for the value of technology at the household level, lack of cohesive interest in technology at the local level, and lack of initiatives to encourage awareness and build interest in technology at the state level.

The Approach: Leveraging the collaborative nature of the public-private partnership structure, ConnectKentucky developed and implemented a plan to address Kentucky's broadband challenge. Key elements vital to the success of the plan include:

Mapping: To create a picture of where broadband did and did not exist, ConnectKentucky created broadband inventory maps. The maps provided the vehicle for "purpose driven data collection" to help promote the use of current service while also identifying where specific gaps remain. Data layers (from the census bureau and other state-level data sources) provide additional demographic and community

information to identify density, planned development, and existing public assets, such as water towers, that could be used to plan for extending broadband coverage.

To create the broadband inventory maps, data are collected from all providers and account for service availability, based on technology type. For example, fixed wireless mapping utilizes a number of variables as inputs to produce propagation depictions that provide a geographic representation of where the signal actually reaches based on terrain, ground clutter, et cetera.

Data Collection, Analysis and Reporting: As detailed above, ConnectKentucky collects service-level data from all broadband providers in order to produce broadband inventory maps and provide corresponding gap analyses. Additionally, ConnectKentucky serves as Kentucky's broadband data clearinghouse with the intent to:

• Generate market intelligence for unserved areas at a local level to help providers identify investment opportunities and to effectively lower the cost of market entry;
• Provide a central resource for policy makers who are evaluating regulatory matters, assessing incentive programs, and generally tracking the status of broadband deployment and use in Kentucky;
• Collection and reporting of data from household and business surveys assist in verifying "supply side" data, tracking progress, identifying barriers and opportunities, and tracking household-specific data related to speed of service, price points, et cetera.

Demand Creation and Aggregation: Local "eCommunity Leadership Teams" create local technology strategies across multiple sectors including: local government, business and industry, education, healthcare, agriculture, tourism, libraries, and community-based organizations. The local teams generate and aggregate demand by identifying ways to better leverage technology in local communities. Additionally, grassroots awareness campaigns are channeled through eCommunity teams, creating a local response to increasing awareness of the value of technology.

Public-Private approach to overcoming obstacles: ConnectKentucky's structure is self-replicating in terms of its ability to address challenges in a manner that is flexible and customizable to local realities. The public-private partnership approach allows for the development of initiatives that solve deployment challenges locally, promote the value of technology in proper context, improve technology literacy, and drive adoption among households, businesses and communities.

The Results: ConnectKentucky has provided Kentucky with a comprehensive approach that accounts for both supply and demand realities in a manner that respects consumer needs and encourages market-based results. With an accurate map of broadband services and gaps, coupled with efforts to improve take rates, private sector providers have invested aggressively in the Kentucky market, and consumers and communities have reaped the benefits. Data collection and reporting by ConnectKentucky is "purpose-driven" and the purpose is to achieve ubiquitous broadband coverage that enables job creation and growth, advanced education, improved healthcare and more efficient government services.

Over the implementation of this initiative, Kentucky has experienced a technology turnaround. Consider the following successes that have occurred during the last 2 years:

• Broadband inventory maps have been created for the entire state, promoting current coverage and allowing providers to better target unserved areas;
• Broadband availability has increased from 60 percent to 93 percent of households able to subscribe (on track to reach 100 percent by the end of 2007), representing 504,000 previously unserved households and more than 1.2 million residents that can now access broadband;
• Broadband use at home has increased 73 percent, a rate that has led the nation;
• Broadband use among Internet connected businesses rose from 65 percent to 85 percent;
• Home computer ownership grew by 20 percent while the national average rose by 4 percent;
• More than $650 million in private capital has been invested in Kentucky (unprecedented);
• Nearly 2,000 home computers have been distributed to the homes of underprivileged Kentucky students through the No Child Left Offline program;
• eCommunity Leadership Teams have been established in every Kentucky county creating grassroots technology growth plans across nine sectors;
• More than 70 percent of Kentucky counties now operate or are in the process of constructing a meaningful web presence for e-government and online citizen services, up from about 30 percent just 2 years ago;

• 22,000,000+ positive media impressions have covered Kentucky technology growth.

The Impact: Over the last 2 years, more than 14,500 total technology jobs have been created in Kentucky. During the same 2-year period, in the IT sector alone, Kentucky jobs have grown at a rate 31 times the national growth rate: 3.1 percent for Kentucky versus 0.1 percent nationally, representing a reversal from years prior to program implementation.

Technology literacy has improved, the number of high tech jobs has increased, and Kentucky communities are enjoying the return of their children. Consider these improvements related to Kentucky's "brain drain" challenge:

• Today, 86 percent of all Kentucky graduates remain in Kentucky to live and work—an 18 percent increase since 2000;
• Since 2000, there has been a 50 percent increase in the number of out-of-state students who remain in Kentucky;
• Among graduates who are Kentucky natives, 95 percent of them now remain in Kentucky;
• The percent of doctoral degree students who stay in Kentucky has nearly doubled (from 27 percent to 52 percent).

Today in Kentucky entrepreneurs are thriving; businesses of all sizes are finding an environment ripe for growth; rural communities are finding ways to diversify and provide attractive opportunities for their children; primary schools and universities are connected as never before, providing content and curriculum previously not possible. In short, as the broadband challenge has been addressed a strong foundation was established to allow for technology-centric solutions and improvements to flourish.

Kentucky has demonstrated the importance of the national broadband discussion and the relevance of technology to America's ability to compete. Based on our experience in Kentucky, we know that technology diminishes the significance of distance. In the past, opportunities to thrive have depended largely upon one's proximity to major markets. Technology has made the distance factor irrelevant. In other words, with the availability of cutting edge technology, entrepreneurs and businesses can thrive wherever they choose to locate. Technology has become the great equalizer for individuals and communities alike—creating opportunities, fueling better education, higher quality healthcare, and better quality of life—regardless of where an individual or community happens to be located.

This same dynamic, however, represents both a huge opportunity and major threat for the United States. Other countries have invested in broadband towards achieving universal access—and like Kentucky, they have managed to leapfrog their previous standings to become a competitive force. It is the hope of Connected Nation that this Congress can call the country to arms on this issue by conveying the true sense of urgency for action. The nation needs to know where it stands with regard to broadband deployment. We need a map that shows us not only where broadband is, but where it can take us. The nation deserves a model that leverages the best of both the private and public sectors for the sake of strong communities. No doubt, it is a challenge of historic proportion. Just as previous times called for a national response to the needs for railroads, highways, electricity, and telephone service—the broadband challenge calls for an aggressive and comprehensive response to ensure that America remains the dominant leader in the global economy.

Thank you, Mr. Chairman, for the opportunity to present to this esteemed committee.

Mr. MARKEY. Thank you very much, Mr. Mefford.

The Chair will now recognize himself for a round of questions, and we will begin with you, Mr. Ford. The draft bill suggests one way to obtain greater granularity of data, namely moving to nine-digit ZIP codes. You suggest an alternative: census block data. Can you explain why you think that is a better approach?

Mr. FORD. I think this is an issue of collection, presentation and dissemination of information. I don't think any of the data is going to be collected as ZIP+4 or a census block because companies are not going to provide information in that format. They are going to provide information in the format that they have it in. It is put into a mapping program, and as Mr. Mefford said, you can overlay all

sorts of geographic data on top of that. My concern is how it is provided to the public in its form. A map is nice, it is pretty and it is easy to see, but you can't take information from a map visually and use it to study it outside the organizations that have the data.

Mr. MARKEY. Let me go to you, Mr. Mefford. How did you deal with this issue of using census data?

Mr. MEFFORD. Much as Dr. Ford explained in his testimony, we used service-level data, so it is actually where service reaches, and so layering other census data on top of that provides for an easier path to analysis.

Mr. MARKEY. Mr. Cohen, many of the witnesses say that it is not necessary for the FCC to measure and report on actual broadband speeds. Rather, they say the FCC should measure something more like best efforts broadband speeds. Can you explain why consumers need to know what their actual broadband speeds are?

Mr. COHEN. Sure. Thank you. Well, speed matters. It matters up as well as down. Oftentimes there is no attention to up, and we are not just talking about downloading movies, we are talking about sending health care information. We are talking about people's ability to communicate in two directions, and so we think it is critical to do it both ways. We are talking about education. We are talking about health care. We are talking about people who are disabled. Speeds matter in terms of how you use the service. Right now that is basically obfuscated. People don't even know what their speeds are. And the other comment I would make is price is connected to speed. So we would say that the affordability, the universality, the take-up rate, as others have said here, is also critical to measure.

Mr. MARKEY. Thank you.

Mr. Scott, we have heard much from industry and others on why the OECD's broadband rankings supposedly understate the extent of broadband deployment in the United States. Now, we had a hearing on that issue with leaders from around the world a couple of weeks ago. In fact, the U.S. State Department saw fit to send OECD a letter to complain. I understand that you have looked into these complaints. Can you tell us what you found?

Mr. SCOTT. We took those complaints very seriously and analyzed some of them to see whether or not they changed our ranking, and in particular we looked at the special access lines, the big business lines that the OECD didn't count in their numbers, and we went to the wireline bureau——

Mr. MARKEY. That is the reason they said that we really don't get the full credit, because we have special access lines here in the United States, and they don't count them in OECD.

Mr. SCOTT. So we looked at that, and we called up the wireline bureau and said how many special access lines are there that would be in that category, and they didn't—as is typical at the FCC, they didn't have an exact number. They estimated it for us at around 600,000. So we brought that up to a million just to be safe, and we refactored that into the OECD numbers and found that it didn't change our position relative to other countries.

Mr. MARKEY. But what ranking did we have before you included special access? What ranking did we receive?

Mr. SCOTT. It was 15.

Mr. MARKEY. And what did we move up to after you included them?

Mr. SCOTT. We didn't move up.

Mr. MARKEY. We stayed the same?

Mr. SCOTT. Yes.

Mr. MARKEY. Oh. That wasn't clear in the testimony we had 2 weeks ago and the complaints that we received. So it is not that big of a difference counting the special access?

Mr. SCOTT. No.

Mr. MARKEY. Very interesting.

Let me complete my time and turn and recognize the gentleman from Michigan, Mr. Upton.

Mr. UPTON. Thank you, Mr. Chairman.

Mr. Mefford, when was it that ConnectKentucky actually began to crystallize in terms of a thought, in terms of beginning to work on this project, and what was the cost and how were you able to raise the money for it? I think it was about $12 million, but you might confirm that for me.

Mr. MEFFORD. Yes, sir, I appreciate the question. It was about 3 years ago that statewide effort began to crystallize, as you say, and the sources of funds over the previous 3 years have——

Mr. UPTON. Did you have an assessment through chambers of commerce, or did the State of Kentucky help your county support industry?

Mr. MEFFORD. Yes, sir, primarily it has been the support of the State. We have had funding through grants from our State economic development cabinet, grants from our local development agencies. We have also had Federal support from the Appalachian Regional Commission and also some level of support from the Rural Utilities Service.

Mr. UPTON. But the total is about $12 million? Is that $12 million a year?

Mr. MEFFORD. No, sir. I am sorry. It is actually roughly $3 million, $3 to $3.5 million per year total. I should say that some of the funding also comes from some private-sector companies as well.

Mr. UPTON. And now in essence it is done, right? What are your ongoing efforts?

Mr. MEFFORD. Well, we have surpassed some of the goals we set for Kentucky 3 years ago, but there is still work to be done, and so we are at 93 percent availability. We pledged 100 percent availability by the end of this year. There is also work on the demand side which, as you know, never ends. I mean, we are working with every community in Kentucky to increase the use of the technology.

Mr. UPTON. Now, I know it is viewed as even though you did receive some State and Federal funds, what is the share as a percentage from Government funds versus private funds that you might have gotten from industry or individuals?

Mr. MEFFORD. It is roughly 80/20.

Mr. UPTON. Eighty/twenty?

Mr. MEFFORD. Yes, sir.

Mr. UPTON. Government funds?

Mr. MEFFORD. Yes, sir.

Mr. UPTON. And as you began to operate this, as I understand it, one of the critical factors was that the information was kept con-

fidential in terms of what you actually gleaned from the different providers of broadband. Is that right?

Mr. MEFFORD. That is right. That is correct. We established a non-disclosure agreement that establishes the level of detail——

Mr. UPTON. And was that absolutely critical in terms of the success that you were able to—in terms of cooperation that you were able to get from those providers?

Mr. MEFFORD. Yes, sir, it was certainly one of the critical factors. It helped address the sense of vulnerability among providers that the proprietary data would be made publicly available. We had some measures to be able to secure that. Also, another critical factor to them being willing to give us data was the demand-side work and the fact that they were seeing take rates increase almost immediately as a result of having their service areas mapped and also by providing information about the gaps that existed. It was essentially market intelligence that helped them better target investments in unserved areas.

Mr. UPTON. And once the providers saw the unmapped areas that were there, how willing was the industry to in fact deploy into those areas?

Mr. MEFFORD. I think that is perhaps the best news of this effort is that they were extremely willing, once the gaps were clearly illustrated and we could begin overlayering data such as household density and plan development, they could see where the best places were to invest pretty quickly.

Mr. UPTON. And in terms of what was in those unmapped areas, I mean, did you—I look at my district where we have, as an example, Western Michigan University is in Kalamazoo and that was literally one of the very first public educational institutions that became a wireless entity. Did you identify hospitals and major employers and universities and other things that would be a magnet towards deployment of that?

Mr. MEFFORD. Yes, sir. We do that on the community exercise that we do with the local communities. We bring local government, we bring business and industry, health care, education, agriculture, tourism, local development——

Mr. UPTON. Did you work with local chambers and different economic development engines as well then in——

Mr. MEFFORD. Yes, sir, we work with those and all those other sectors I mentioned in all of Kentucky's 120 counties.

Mr. UPTON. And the last question, since my time is running out, as you looked at the speed, particularly the FCC's 200 kilobits definition, how important was it to actually measure the speed and make that available in terms of what was there?

Mr. MEFFORD. We didn't set a minimum threshold frankly because we felt that we didn't want an ideal or a perfect version to be the enemy of the good, and so there are communities—we have some of the poorest counties in the Nation among our Kentucky counties and so there are first step broadband technologies that are relevant and helpful and empower those communities whereas advanced services, fiber and so forth just would not be a reality. We have mountainous territories that just clearly will not receive some of these higher-end technologies in the short term. So I can point to examples across the board. We had one particular example of a

lady who contacted us in far western Kentucky who said I have multiple sclerosis and I cannot keep commuting an hour to work, I need broadband and I need it today, and we were able to work with our providers and get her broadband. It is not at speeds mentioned in this draft. It was at a lower speed, but she reported to us immediately that this technology has changed my life, I can now work from home and I can enjoy the company of my kids and I don't come home dead tired every day. And so with that example, I would say that it was important for us not to eliminate the opportunity to deploy that type of technology.

Mr. UPTON. Thank you.

Mr. INSLEE [presiding]. Thank you. We will recognize Mr. Green of Texas.

Mr. GREEN. Thank you, Mr. Chairman. I should have done this earlier. I want to recognize not only our former colleague, Steve Largent. Every once in a while we used to get to play basketball together. I can never match your jump. I know that. But also, President Cohen from CWA, I have to add the disclaimer, I am a CWA member, and for those of you who think I can go out and fix your broadband, I came from the publishing sector, and government work over the years and the legislature and Congress has ruined me for even printing a newspaper anymore, much less fixing your telephone.

Mr. McCormick, section 2 of the draft legislation defines a broadband connection as 2 megabits per second downstream and 1 megabit per second upstream. Clearly the current definition of broadband used by the FCC of 200 kilobits per second downstream and 200 kilobits per second upstream is by many standards extremely low. What do you think the standard for broadband should be?

Mr. MCCORMICK. Congressman, the purpose of this legislation is to figure out who has what, and as Mr. Mefford just testified, there are consumers who if they can get broadband at the speed of four times the speed of dial-up, it gives them the ability to have speeds just as fast as you can turn a page in a book or change the channels on a TV. That is a huge advancement. It is important to us to know what areas have even that and what areas do not. The FCC currently looks at four different tiers of broadband service. The first tier goes from 200 kilobits per second to 2½ megabits per second. We think it is important to map everything, to have a comprehensive map. We realize that broadband speeds are going to continue to increase with technology, but the goal here is to be able to provide consumers with access that is superior, far superior to what they have today and to figure out who has it and who doesn't.

Mr. GREEN. In follow-up for Mr. Mefford, so you approach it as, the minimum level would be 200, but it is a consumer issue and consumer information, so they would know that if they are moving into a community, they would know that that is the level of the broadband that is available, not maybe what they are leaving or what they would hope to have but that consumer information. Is that correct?

Mr. MEFFORD. Yes, sir, that is correct.

Mr. GREEN. Mr. Cohen, you mentioned in your testimony that you agree with the standard in the legislation of 2 megabits up-

stream and 1 down. Is it a good idea for Government to set these standards? Because in Houston, it seems like we are fortunate to have competition where people will pay for the higher speeds.

Mr. COHEN. Yes, I mean, we think there needs to be labels on this of some sort to differentiate so that consumers will know, policymakers will know what actually exists there. If we call everything high speed and blend it all together from 200 kilobits up, here is a chart, here is what is going on in the rest of the world and we are virtually off the chart. So, we would say that speed matters. It is better to have 200 than 56 kilobits, but we need to set a goal. So Japan's goal was 100 megabits a second by 2010 to every house. What is our goal? What are we after? We can't mandate it, but what are our goals? To set the goals, we need to know what the speeds are.

Mr. GREEN. You mentioned considering a new definition for second generation broadband to carry full screen and high def video. The panel heard last week from Mr. Cuban that it would take somewhere in the neighborhood of 1 gigabit per second downstream to achieve. Do you think that figure is accurate? And you mentioned in your testimony how long it would take to download a video. If so, what do you think it would take to upgrade the current infrastructure to reach those speeds?

Mr. COHEN. That is a great question. What it will take is public-private partnerships, not just things like ConnectKentucky but actually figuring out, much as they have done in the rest of the world that is way ahead of us now, how you mix together public policy goals with private—driving up the kind of numbers that Mr. McCormick talked about on an ongoing basis. Because what we have learned is, this country was first, not only first to be there but led in terms of international deployment, international development, infrastructure investment, and we would probably say that some of the things we did had unintended consequences and interfered with us keeping that leadership role. So, what it will take to stimulate private-sector investment is a longer story, but the first step along the way is to set goals and to figure out exactly where we are and then find out what do we have to do to meet the goals to keep us in step with the rest of the world.

Mr. INSLEE. Mr. Green, thank you. We are going——

Mr. GREEN. I understand, and I would like to ask a couple of questions in writing if I could.

Mr. INSLEE. Thank you. I appreciate it. We have got about 13 minutes. We will try to do two more. We will go to Mr. Barton of Texas.

Mr. BARTON. Thank you, Mr. Chairman. I will be brief.

The most important question I have is to Mr. Largent. Are you willing to come out and pitch batting practice for the Republican baseball team in the next month as we get ready to take on Mr. Inslee and Mr. Stupak and Mr. Doyle on the dark side?

Mr. LARGENT. I have volunteered my services for both.

Mr. BARTON. For both?

Mr. LARGENT. I am bipartisan.

Mr. BARTON. My God. What a bummer.

Mr. LARGENT. It didn't help last year.

Mr. BARTON. What a difference an election makes, right? All right.

Well, now that we have that out of the way, Mr. McSlarrow, I scanned the written testimony, and I tried to listen to most of the witnesses verbally. You seem to be kind of where I am. This isn't the worst idea that has ever hit the pike, so we ought to be for it in some way, but you seemed a little bit ambivalent about it, which is kind of where I am. Wouldn't we be a little bit better off maybe to just inventory the different speeds as opposed to set this 2 megabit per second standard and just inventory what is out there? I may have misinterpreted what you said, and if I did, it won't hurt my feelings if you tell me that.

Mr. MCSLARROW. I think—here is the way I would put it. I think it is useful to inventory what is out there precisely if you are thinking about unserved or underserved areas so that we know what we have out there. I think it is a tough question about whether or not there should be some standard, some metric above which and below which where you think of broadband or not broadband, because I don't know how you define that. I really don't. And it is changing and developing every day. But it is probably not harmful to try to grapple with that question, but I think it more towards your point. It is more important to get an honest, candid assessment of where we lack broadband, where we lack anything, first of all, and what is out there so that actual competitive pressures and the public-private partnerships that we have all been talking about can focus on that kind of problem and actually provide a meaningful solution.

Mr. BARTON. Mr. McCormick, your association testified enthusiastically in favor of this legislation. Assuming that we do it, what would your members do with it?

Mr. MCCORMICK. We are enthusiastically in favor of having an idea of where we are. We are not in favor of redefining broadband to be 2½ megabits, and what our members would do with it is to continue to work with public-private partnerships like ConnectKentucky, to look to build a basis for those who want access to broadband, who will, in fact, take if it is deployed to that area, and we will also use it to help researchers and policymakers to understand the level of competition out there, and because technology has brought us to a place where barriers to entry are very low, they just take investment and use it to encourage investment.

Mr. BARTON. Does any of the panel think that if we did this inventory at the national level, it would change your business plan? Would decisions be made differently than if this information was not available?

Mr. MEFFORD. Congressman Barton, I would respond to that. Our history in Kentucky, we did see that. In fact, having that tracking and even tracking different speeds informs the business plans of providers in a significant way. In other words, I also think tracking lower speeds would encourage other providers outside of those areas to invest or current providers to invest in higher-bandwidth technologies.

Mr. BARTON. Mr. Chairman, I am going to yield back because I know you want to get one more round in, but I want to thank the panel for participating in the hearing.

Mr. MARKEY. I thank the gentleman from Texas.

I am going to advise the gentleman from Michigan, Mr. Stupak, that there are 8 minutes and 47 seconds left for the vote on the floor, and I am going to recognize the gentleman from Michigan for as much time as he may consume at this point, and then if he could recess the hearing, and then I intend on returning after that roll call. There will be four 2-minute roll calls. I will return at that point after those 2-minute roll calls for approximately a 20-minute period before we then have a vote on the recommittal motion.

So I recognize the gentleman from Michigan, Mr. Stupak.

Mr. STUPAK. Thank you, Mr. Chairman. I am sorry Mr. Barton left because it should be noted that Mr. Largent has pitched Democratic batting practice the last 2 years before the election. So I just want to make sure Joe understood that.

Mr. McSlarrow, if I may, thanks for your testimony on the draft and broadband deployment. I appreciate your acknowledgement of the problems facing rural America. I know you have had some concerns about the Rural Utilities Service, subsidized broadband loans and grants going to communities where there are already multiple broadband providers. How would this draft legislation help that situation or at least address those concerns?

Mr. MCSLARROW. Well, I think in two ways. One, the arduous loan program, the applications, a proxy for any Government program, is trying to target funds for support to rural communities suffers from the fact that they don't actually know which communities have existing providers, whether or not it is one or more providers in a competitive market, and so therefore they are dependent to some extent on the applicants coming forward and saying I would like some of this money or I would like a loan, here is the state of play in this area, and so what we have seen just as a matter of practice is that often those loans, the guarantees that have been granted to providers, are actually going into suburban areas, which is the last place anybody really intended that they go. So I think both in terms of the agency and I think keeping people on this in terms of applications, it would benefit.

Mr. STUPAK. Well, I authored the Rural Utilities Service provisions in the House working with the Senators from Dakota there, and now we are getting the farm bill up so many of those concerns like Houston really wasn't a rural area, but yet we tried to do some in my district, and they said we weren't rural enough. It doesn't make any sense. So we are going to try to strengthen that, but if you have any further concerns on that, please let us know because that part of the farm bill is moving quickly.

Mr. Scott, thanks for your testimony. You talked about the need to establish the evolving definition of high-speed Internet access. Do you think it would also be useful to have data broken down by multiple categories of high speed? In addition, do you think that wireless should have a different standard? Isn't the broadband experience of sending a text messaging on a Verizon cell phone different than downloading a movie over Verizon FiOS?

Mr. SCOTT. Absolutely it is different, and we may have to have a lawyer-off here, but I don't see anything in this bill that prohibits the FCC from doing inventory of all the broadband lines available that are not dial-up. I think that changing the standard for high speed is more akin to what Mr. Cohen alluded to, which is setting

a standard, setting a goal, and having an evolving standard so that we are trying constantly to raise the bar so that we can advance and try to get back up with the rest of the world, as you can see on Mr. Cohen's chart. I think ultimately the key point here is the value for the consumer measured in the cost per unit of speed. Because if you look at it, I mean what we found is, in a lot of places there is broadband available. Over 90 percent of households that have a cable line going to the house have cable modem capability, and sometimes that is the only one, and it is expensive, and it could be price that is the problem, but in a lot of cases people have it available, and they are just not buying it because they don't see it as important enough to buy. So we see the speed prospect as a question of value. The faster the network, the more cool stuff there is to do and the more likely it is that people will buy it.

Mr. STUPAK. Mr. Largent, would you care to comment on that question? Do you think data should be broken down by multiple categories of high speed, especially do you think wireless should have a different standard since——

Mr. LARGENT. Well, I think it should be broken down by speed, because I think it serves as an incentive to get faster, and faster and that is what is taking place in the wireless industry. We were a lot slower than we are now, and we have picked up the pace and that is going to continue over time. Because I think measuring all speeds from 200 kilobits up is actually a great incentive to continue this move to faster and faster speeds.

Mr. STUPAK. And then you get into the argument of Net neutrality, because we saw that before if you start breaking it down by categories.

Mr. LARGENT. What is that about neutrality?

Mr. STUPAK. Net neutrality.

Mr. LARGENT. What about it?

Mr. STUPAK. Well, they argue the Internet is no longer accessible to everybody because of the data and how much data you can move at different speeds, then we get back into that old argument.

For the entire panel, if you want, just put it in writing. I would appreciate because we have 4 minutes left in that vote, and we are probably going to be late. But anyway, legislation directs the Commission to compare broadband deployment in the United States with 75 communities in at least 25 countries abroad. I think it is a good idea. However, I would like to see more of a rural-urban comparison. So if you would, would you support including rural communities among the list of 75, or are there any other ways we can do this comparison other than what is dictated? So if you have some ideas on that, other ways, especially, we would like to hear it. If you could send the comments to the committee, the members would appreciate it.

And with that, on behalf of the chairman, we are going to recess until after those 2-minute votes. Thank you all.

[Recess]

Mr. MARKEY [presiding]. Ladies and gentlemen, if you would, the subcommittee is reconvened, and after waiting for another 10 seconds, we will turn and recognize the gentleman from Nebraska, Mr. Terry.

Mr. TERRY. Thank you, Mr. Chairman, and I appreciate you having this hearing. As noted in one of our last hearings when we were comparing broadband access in America to the rest of the country, Mr. Ford was there, and one of the things that we noted is, there is no inventory for us to be able to really see if we are talking apples to apples or something else here, and so I do think this is an important first step. And as Rick Boucher and I drafted the USF reform bill, we actually looked at the ConnectKentucky, and frankly I think what we are trying to do there meshes with the concept of the public and private, and so we can still use now the USF with the public commitment to it, especially in the high-cost areas, so I see how these two issues merge or at least that the is the conclusions that Rick and I came to when we studied the ConnectKentucky.

I do have questions though about the inventory or the mapping as we call it here, just to make sure that we are talking about the same things and whether 2 megs or 1 up, down, sideways, whatever. I do think we need to initially take an inventory of what we have got and then set the goals, and I think first of all the chairman is correct that this committee and subcommittee is the one that should be setting the goals to define broadband. It would be interesting though to see if we set it at 2 or 3 or 5 or 1 or whatever it will end up being, because I am sure at some point in time we are going to do that, that we do it so we don't leave certain technologies out at this point or, for example, Mick Jansen from Great Plains Telecommunications of Blair, NE, which is only a few miles from my home in Douglas County, NE, and is one of my mentors on telecommunications policy, he has a loop that is 60 miles, 30 miles to the house, one resident, and then back, and that is difficult maybe for him right now to push 5 megs or 3 megs, but he can do 1 right now with the 60-mile loop. So I think that we need to kind of put that into the inventory.

But I want to ask Mr. McSlarrow and Mr. McCormick this, and I mean this in a sarcastic way, but it makes my point in that the broadband services to a customer in the billing, it is very confusing to a customer because what is advertised many times is rolled into a bundle of package instead of stand-alone, and I joked that the bills for your broadband telecommunications, video and all of it are becoming more complicated than the hospital bills. So when we do this, what would you suggest be the boilerplate, because I think maybe every town, every system may have a different scenario of what they bundle, how they can bundle, what speeds they bundle, and so I am not sure what the criteria should be so we can have apples-to-apples comparisons as we map. So I will let Mr. McSlarrow and then Mr. McCormick answer what the criteria should be so that we are on an even playing field in our comparisons.

Mr. MCSLARROW. Well, as a consumer of all these products, I am not going to push back about confusion at all. I mean, I don't understand any of it, to be honest.

Mr. TERRY. I appreciate you sharing that with us.

Mr. MCSLARROW. Ironically, though, in an effort to disclose as much information to the consumer, we make it more confusing. I mean, there is that irony involved, and I am only familiar obvi-

ously with cable modem service but this is a service, and first of all, it is asymmetrical, so you have different downstream speeds because that is where most of the capacity needs to be used, as opposed to upstream where you just may be pinging a request. Second of all, it is a shared network, so things are happening during the day. If your neighbor is downloading movies right next door all day long, it is going to affect the speeds. The language tends to be vague so there is sort of—you are buying for a certain price a speed, say, in my case I have got a 15-megabit service for cost. I know at least what that means to me is that when I go out and I have a demand for something on the Internet, it is going to supply that for that burst of activity. I don't need it for other times, I need it then. But I also have to know that it is a shared network, and so I think thinking about this as an average across periods of the day gives you a better sense of the metric of what you have. But I don't know and I don't really have a creative answer for how you balance maximum disclosure of what is actually happening with avoiding consumer confusion. I don't know if there is something, a one-size-fits-all, that will apply to every broadband service provider.

Mr. TERRY. I appreciate that. Mr. McCormick, I want to add on this question about whether or not any of your members and then come back to Mr. McSlarrow and ask him if any of your members are willing to give proprietary information to a Government agency subject to FOIA.

Mr. MCCORMICK. No. With regard to that, we are reluctant to give proprietary information to a Government agency if that information is subject to FOIA. There are certain FOIA exceptions, but I think you have a very important point, which is part of investing and deploying broadband is to develop a business plan that allows you to differentiate your product in the market and compete. What we have today is, we have a lot of competition. You raised the issue of bills. Historically in our industry, consumers were charged for telephone service based upon minutes of use and distance traveled. That is no longer the case today because of competition. And so I think that as we are mapping, what we would hope is that for purposes of looking at coverage areas and doing inventories, that there would be some categories of service so you know what speeds are available to consumers. But then what we are going to have is, we are going to have vigorous competition on speed, quality of service and price, and we are going to have it on a multi-platform basis. The three of us right here are going to be aggressively competing, our industries competing, and the consumer will benefit from that because each of us is going to do our best to tell the consumer why we think our offering is preferable than the competitor's.

Mr. MCSLARROW. And just to echo Walter, we think it is important to gather as much information as possible. If it is proprietary, we would urge the committee to ensure that not be disclosed, including under FOIA.

Mr. TERRY. Would pricing of 2 megabits down be——

Mr. MCSLARROW. I think if it is publicly available. Pricing information, that is not the issue.

Mr. TERRY. I yield back.

Mr. MARKEY. The gentleman's time has expired.

The Chair recognizes the gentleman from Mississippi, Mr. Pickering.

Mr. PICKERING. Mr. Chairman, thank you, and I appreciate the opportunity to have this hearing. As we go forward, it is very important for us as policymakers to be able to have accurate measurements of where we are as a Nation so that we can come up with the right policies.

Mr. McSlarrow, Mr. Largent and Mr. McCormick, I would like to just ask two quick questions of each of you, or maybe just one in combination for each of you to answer. It is critical to get it right where we are as a Nation, but at the same time there is a chicken and egg. What are the policies that will actually help you build out and deploy? And if you could, what are the one or two things that you would recommend from a policy perspective for us to get where we hope to be as a Nation on broadband deployment? And from the 700 MHz to the USF deliberations, are there any other regulatory or other impediments that you see? What are the two recommendations that each of you would give to those of us here to make the right policy for the broadband deployment as we go forward?

Mr. MCSLARROW. In 1996, this committee led an effort in the past Congress to deregulate rates for cable. It didn't actually take effect until 1999, and literally that year it spurred over $100 billion in investment where we rolled out broadband in America, so it is pretty clear to me that continuing that policy forward is a good idea for every provider in the marketplace. And the other point I would make is that for the broadband pipe that we supply, much of it, as you know, is used up by analog TV channels. Out of the 750-meghertz pipe, 450 of it is used up by analog. So when we are doing our digital transition, just to stay on message here, it is vital that we don't have an agency like the FCC impose dual carriage or multicasting requirements where we suck up capacity that we could free up to roll out the 100 megabits of service that I think every member of this committee says the American people want.

Mr. LARGENT. I thank you for the question, Congressman Pickering. I would say first of all, the great thing about the wireless industry is that we continue to evolve and get better and better. I brought a phone from maybe the early 1990s, late 1980s. This is where we were just 10 years ago, and this is where we are today, and we continue to evolve and get better and better and better and we are going to continue to do that, and it is because of the competitive pressures that we have in the marketplace that we are doing all of these great things. But you asked about additional points that we would like to make at this hearing. I would say 700 MHz is really critical for our industry to have additional spectrum to operate on and the 700-MHz auction being scheduled at the end of this hearing hopefully that that happens on schedule. It is very important to our industry, particularly if we are talking about deployment of broadband. That is going to be real key for us.

Following through on the AWS auction is also highly critical. The spectrum has already been auctioned, but we have some—we could use some help from Congress, encouraging—NTIA has done a great job but maybe some help in encouraging some of the Government users to move off the spectrum as quickly as possible so that we can roll it out to our customers as quickly as we can. The universal

service cap that the Joint Federal-State Board has recommended would be highly harmful to our industry, in particular in rolling out the type of services that we are talking about in this hearing to rural America and so that is very much of a concern for entry. And finally, the last thing I would say is, the analog sunset is another way that we have given over 5 years' time to get people off of this analog—have this analog sunset occur and yet we still have a few people that want to hang onto the analog, and this is spectrum that we could use again in a more effective manner as we roll out digital if we can actually sunset it now after the 5 or 6 or 7 years that we have given people to move off of it. So those would be the few items that I could think of that we would want to make in this hearing.

Mr. MCCORMICK. Congressman Pickering, thank you. It is a great question because we all want to see greater broadband deployment. We think it is the future of our country. I would say three things. First, we are at the place with unlicensed spectrum wireless technologies, new technology, broadband over power line, where the barriers to entry are now extremely low. All it takes is investment. So first, allow those who invest in offering broadband to offer over broadband all that broadband can offer—video, entertainment, home security applications, whatever. If they invest, let them do it. Number 2, we think programs like mapping and doing an inventory coupled with public-private partnerships like ConnectKentucky and modest changes to the RUS program would really help with investment. And third, tax policies. We think that to extend the Internet tax moratorium is a very important thing to do.

Mr. PICKERING. Mr. Chairman, thank you.

Mr. MARKEY. I thank you, Mr. Pickering.

What I would like to do is ask each one of you to give us a 1-minute summation of what you want the committee to remember about your testimony as we are going forward. We will go in reverse order of the opening statements of the witnesses, and we will begin with you, Mr. Mefford.

Mr. MEFFORD. Thank you again, Mr. Chairman and all members of the committee, Ranking Member Upton. The bottom line of the ConnectKentucky model is that it is a mission-driven approach that is comprehensive in nature. It accounts for mapping and data collection to impact both supply and demand of broadband availability and so with a mission to fill the gaps and the mission to increase take rates, we use that to drive the policies and the programs of ConnectKentucky, and again the outcomes sort of bear out the merits of the model.

Mr. MARKEY. Hold on just one second. That bell means that we have 15 minutes to vote, and there will be one vote that will then be followed by a second vote, which will be the final passage of the legislation which we are considering on the floor, which is the Defense bill, but please continue again, Mr. Mefford.

Mr. MEFFORD. Thank you, Mr. Chairman. I will close with the key point that the public-private nature of ConnectKentucky has been critical to the success and that structure allows a degree of flexibility that allows us to address market realities on both the supply and demand side at a very local and granular level, and so

I would encourage the Chair, the committee, to consider this. I commend you again for the work on this draft, and we look forward to supporting your work going forward.

Mr. MARKEY. Thank you.

Mr. Ford.

Mr. FORD. There are four things that have struck me today as I have listened to the testimony and the questions. One is, I can do about eight pages in 5 minutes. The other is that all of broadband providing a service that allows someone with M.S. to work from home and be with their children and be a productive member of our economy or to download entertainment and turn the computer into a television set, if we start focusing on high download speeds for entertainment purposes, we are missing the true benefit of broadband, which is allowing people to contribute to the economy, and I think that is very important to remember. The other point is, if you don't collect 200-kilobit data in this mapping project, you are not going to know how bad the FCC's data was. You are going to be comparing apples to oranges again. I think that is worth looking into. And third, the goal of ConnectKentucky and I think the goal of any program like this is 100 percent availability or close to 100 percent availability of broadband service. I don't know that looking at Sweden and Iceland says anything about that. We have a goal, 100 percent. That is our target, not what Japan is doing, not what Sweden is doing and not what the U.K. is doing but what we want, which is universal coverage. Thank you.

Mr. MARKEY. Thank you.

Mr. McCormick.

Mr. MCCORMICK. Mr. Chairman, we think a map makes a lot of sense. We fully support it. Number 2, we think the more comprehensive the map, the better it is, so we think that it should map all broadband take rates, all service providers. Three, draw upon what works with public-private partnerships in putting together the map, and finally, the best data available may not come from ZIP codes. Let us look for gathering it in a way that is the best data available.

Mr. MARKEY. Thank you.

Mr. Largent.

Mr. LARGENT. Mr. Chairman, I would just say that CTIA and the wireless providers support what you are trying to do. We would just say that there are three things that we would offer as changes. That would be to count all broadband from 200 kilobits and above, that carriers provide their own coverage map. We are providing those maps now. NTIA can then manipulate the data however they would like to through ZIP code, census tract or any other useful measure, and the data collection should be done at the Federal level, not the State level.

Mr. MARKEY. Thank you, Mr. Largent.

Mr. McSlarrow.

Mr. MCSLARROW. Mr. Chairman, thank you for your leadership on this issue. I think as others have said, I think we would urge you to focus on doing the most comprehensive inventory you can really with a goal toward leveraging that information to identify those areas that are unserved or underserved so that you as policymakers, whether it is with Government help or public-private part-

nerships, can identify those areas and figure out how we can expand broadband connectivity to all Americans. Thank you.

Mr. MARKEY. I thank you, Mr. McSlarrow.

Mr. Scott.

Mr. SCOTT. Mr. Chairman, Mr. Ranking Member, from a consumer perspective, it is a good bill, a good idea. It is high time that we did it. Looking at the broadband data that we have today, we can see we have some problems, but the data is not detailed enough for us to figure out how to best solve those problems. We need data down to the neighborhood, town and city level in order to evaluate the true state of availability and the true state of adoption, not just by technology but also by speed and price. It will help us to close the gaps, and it will help us to raise penetration rates. We also need to use that data to target direct investment, enhance competition and create programs that encourage people to subscribe to broadband by getting them the equipment and the training that they need. This bill will help us also assess the long-term trends, which will help us get back on top of the world in broadband. I think it is a good move, and we look forward to working with the committee.

Mr. MARKEY. I thank you, Mr. Scott, very much.

Mr. Cohen.

Mr. COHEN. Thank you. One, mapping, it is a good idea. We support the draft. Two, the global perspective does matter. It is about economic development worldwide. Competitiveness matters. It is critical in rural economic development what the speeds are. We are off the chart. We need to get back on. Three, price matters, and being able to understand the price of speed matters as well. And fourth, goals matter, and this committee setting goals, it is a moving target. It is nothing to be frustrated by. The speeds need to go up. The affordability needs to go up. The universality needs to go up as the years go on. Thank you.

Mr. MARKEY. Thank you, Mr. Cohen, very much, and we thank each one of the panelists. Unfortunately, because of these roll calls, some of the Members who had evinced enormous interest in this subject have not had an opportunity to question the panel, and I am going to make a unanimous consent request that those Members be allowed to submit written questions to the witnesses, and I would ask that the witnesses respond in a timely fashion to those questions. Because of the press of business in the Congress for the rest of the afternoon, unfortunately I will have to adjourn the hearing at this time with my apologies to the other committee members.

My request to the panelists is that you stay close to the subcommittee on this subject. You can obviously pick up the level of interest that exists in this subject. We would like to pass legislation, have it make sense, have constructive suggestions included in the final draft of the legislation that we consider before the subcommittee. I don't think we could have put together a more expert panel to open the discussion. We thank the State of Kentucky for being the national leader on this and the inspiration for the legislative discussion which we are having.

And with that, this hearing is adjourned.

[Whereupon, at 12:30 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

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Committee on Energy and Commerce
Washington, DC 20515–6115

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September 10, 2007

Mr. Larry Cohen
President
Communications Workers of America
501 3rd Street, N.W.
Washington, D.C. 20001

Dear Mr. Cohen:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from certain Members of the Committee. In preparing your answers to these questions, please address your responses to the Members who have submitted the questions and include the text of the Member's question along with your response.

To facilitate the printing of the hearing record, your responses to these questions should be received no later than the close of business **Tuesday, September 18, 2007**. Your written responses should be delivered to **316 Ford House Office Building** and faxed to **202-225-5288** to the attention of Philip Murphy, Staff Assistant. An electronic version of your response should also be sent by e-mail to Mr. Philip Murphy at **phil.murphy@mail.house.gov** in a single Word formatted document.

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Amy Levine, Senior Counsel, Tim Powderly, Counsel, or Colin Crowell, Professional Staff Member with the Committee on Energy and Commerce, at (202) 226-2424.

Sincerely,

JOHN D. DINGELL
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

Communications Workers of America
AFL-CIO, CLC

501 Third Street, N.W.
Washington, D.C. 20001-2797
202/434-1110 Fax: 202/434-1139

Larry Cohen
President

September 18, 2007

The Honorable Fred Upton
Ranking Member
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Ranking Member Upton:

I provide the following response to your follow-up question on September 10, 2007, related to my testimony at the hearing entitled "H.R. ...., A Discussion Draft Addressing Broadband Mapping and Data Collection."

Your question: "1. ConnectKentucky: a. Would you support applying the ConnectKentucky model nationwide."

My response: I strongly support applying the ConnectKentucky model nationwide.

ConnectKentucky has a proven track record as a highly successful public-private partnership designed to promote market-based solutions to deployment of high-speed Internet. ConnectKentucky produced a comprehensive GIS-based county-by-county inventory of existing broadband infrastructure and service availability, a first in the nation. The map identifies the specific communities where additional efforts are required to stimulate broadband investment and allows for the coordination of investment decisions of state and local governments with economic development organizations and private sector companies. The creation of the ConnectKentucky map was a joint effort of the state and local government, local communities, and private sector providers.

Once gaps in viability were identified in the mapping project, the focus shifted to implementation. The ConnectKentucky program created community leadership teams which developed a Community Implementation Plan. The plan identifies community needs; identifies gaps in existing infrastructure; establishes a financial model to address gaps; completes the documentation needed to apply for federal funds; quantifies demand and communicates demand opportunities to private sector firms; and encourages broadband adoption.

Congress should actively support the creation of such partnerships in each state through a program of grants to states.

Sincerely,

Barry Cohen
President

HENRY A. WAXMAN, CALIFORNIA
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MARSHA BLACKBURN, TENNESSEE

September 10, 2007

Mr. George Ford
Chief Economist
Editorial Advisory Board Member
Phoenix Center for Advanced Legal and
Economic Public Policy Studies
5335 Wisconsin Avenue, N.W., Suite 440
Washington, D.C. 20015-2034

Dear Mr. Ford:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from certain Members of the Committee. In preparing your answers to these questions, please address your response to the Members who have submitted the questions and include the text of the Member's question along with your response.

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Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Amy Levine, Senior Counsel, Tim Powderly, Counsel, or Colin Crowell, Professional Staff Member with the Committee on Energy and Commerce, at (202) 226-2424.

Sincerely,

JOHN D. DINGELL
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

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George S. Ford, Chief Economist

8 April 2008

Hon. John D. Dingell
Chairman
Committee on Energy and Commerce
316 Ford House Office Building
Washington, D.C. 20554

RE: Response to question from the Honorable Fred Upton regarding the hearing entitled "H.R. ___, a Discussion Draft Addressing Broadband Mapping and Data Collection."

Question:

1. Connect Kentucky.

    a. Would you support applying the Connect Kentucky model nationwide?

Response:

I am a strong proponent of the Connect Kentucky approach to expanding broadband availability. In fact, I am presently working with the Alabama State Legislature (as a member of the *Alabama House Interim Committee to Study Broadband Internet Access*) to secure funding to adopt such a program for Alabama. Connect Kentucky's non-regulatory, public-private partnership approach to expanding broadband coverage has been highly successful.

Connect Kentucky appears to work because it is a highly local, grass-roots program, which relies heavily on the involvement of local business and government leaders and avoids regulatory mandates that impede cooperation. This "feet on the street" approach aggregates existing demand, educates businesses and Kentuckians about broadband, which spurs adoption, and then educates service providers about demand in rural and insular areas of which they may be unaware. I fear that turning the Connect Kentucky model it into a homogenous "federal program" risks losing that important dynamic—

instead of locally-drafted broadband plans and meetings that find unique and geography-specific solutions to broadband service, a federal program run the risk of cookie-cutter approaches and mandates. Instead, I believe the better route to a "natioanl program" would be for Congress to encourage programs like Connect Kentucky in each state via financial matching programs and easier access to existing federal dollars set aside for expanding broadband service availability in rural areas.

Sincerely,

George S. Ford
Chief Economist

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U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515–6115

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September 10, 2007

The Honorable Steve Largent
President and CEO
CTIA
1400 16th Street, N.W., Suite 600
Washington, D.C. 20036

Dear Mr. Largent:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

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The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

CTIA
The Wireless Association™

Expanding the Wireless Frontier

Steve Largent
President/CEO

September 13, 2007

The Honorable John Dingell
Chairman
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Dingell:

Thank you for your September 10, 2007 letter enclosing a question posed for the record of the May 17, 2007 Subcommittee on Telecommunications and the Internet hearing on broadband mapping. My response to Rep. Upton's question is below:

> **Q.** Would you support applying the ConnectKentucky model nationwide?
>
> **A.** It is my belief that CTIA's CMRS-provider members could support the ConnectKentucky model nationwide if it, as is the case with ConnectKentucky, was established as an independent organization with no affiliation with a government entity or regulatory commission, and if it provided for service provider submission of proprietary deployment data to be protected by non-disclosure agreements.
>
> Whatever model is adopted, it is CTIA's strongly held view that the legislation must clarify that providers of broadband telecommunications service are not obligated to provide to States or units of local government any data that is different than or in addition to what such providers submit to the Federal Communications Commission, unless a provider of broadband telecommunications service voluntarily agrees to do otherwise. A clarification of this nature will ensure that carriers are not faced with inconsistent and overlapping data reporting obligations, as well as minimize the cost of compliance with any broadband mapping mandate.

Thank you for allowing me the opportunity to appear at the hearing on behalf of CTIA—The Wireless Association®. I look forward to working with you, your staff, and the entire Committee on this and other matters of mutual interest.

Sincerely,

Steve Largent

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September 10, 2007

Mr. Kyle McSlarrow
President and Chief Executive Officer
National Cable and Telecommunications Association
25 Massachusetts Avenue, N.W., Suite 100
Washington, D.C. 20001

Dear Mr. McSlarrow:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

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Sincerely,

JOHN D. DINGELL
CHAIRMAN

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cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

National Cable & Telecommunications Association
25 Massachusetts Avenue, NW – Suite 100
Washington, DC 20001
(202) 222-2300

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September 18, 2007

Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

Attached is NCTA's response to the question from Telecommunications & Internet Subcommittee Ranking Member Fred Upton.

Government Relations
National Cable & Telecommunications Association

The Honorable Fred Upton

1. ConnectKentucky

a. Would you support applying the ConnectKentucky model nationwide?

Creating and maintaining an accurate map depicting broadband deployment and availability on a national scale will require a coordinated effort among federal, state and local governments, broadband providers and other entities. ConnectKentucky illustrates the value of having the public and private sectors work together in partnership to develop a clear picture of broadband deployment and strategies for extending broadband availability to communities that lack high-speed Internet access. Replicating the successful broadband mapping efforts of ConnectKentucky on a national level will require a similar cooperative and collaborative effort among the public and private sectors.

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September 10, 2007

Mr. Walter McCormick
President and CEO
United States Telecom Association
607 14th Street, N.W., Suite 400
Washington, D.C. 20005

Dear Mr. McCormick:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

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The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton

1. ConnectKentucky
    a. Would you support applying the ConnectKentucky model nationwide?

We believe the Connect Kentucky program, which relies on public-private partnerships, can serve as a framework for a nationwide plan to both map and improve broadband deployment.

The Connect Kentucky model is a roadmap for the building of accurate, state-wide, broadband deployment maps. Connect Kentucky's first objective was to map broadband availability in the whole state. Then it created technology teams in each community that lacked broadband. These teams looked at computer ownership, technological literacy, and other factors to increase demand for broadband. At the same time, the teams worked with broadband providers to match new demand with new broadband deployments.

By the end of 2007, Kentucky will go from having one of the lowest broadband subscription rates in the country to having broadband available to 100% of its households. We believe that this approach can and should be replicated across the nation, and that the broadband mapping program envisioned by this draft legislation should support, rather than duplicate or supplant, these efforts.

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September 10, 2007

Mr. Brian Mefford
President and CEO
ConnectKentucky
P. O. Box 3448
Bowling Green, KY 42101

Dear Mr. Mefford:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

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Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

Brian Mefford
President & CEO
Connected Nation, Inc.
bmefford@connectednation.com

Response to Post-Hearing Questions from the U.S. House of Representatives Energy and Commerce Committee's Subcommittee on Telecommunications & the Internet

September 18, 2007

ConnectKentucky is a non-governmental entity that does not regulate, and keeps sensitive data confidential through non-disclosure agreements. How important is that to your success? What are the other key features of your program?

ConnectKentucky's non-government status is by design. Early in the research and development of the partnership, we learned that an effective statewide broadband expansion program was dependent upon its operation outside of government. In order to create an environment that fosters collaboration and shared resources for the good of the state, and – just as importantly – empower meaningful data collection that truly identifies the gaps in broadband service, it was clear that a non-regulatory model must be created to bring providers to the table as part of the solution instead of the problem.

During ConnectKentucky's research years, the resounding message from both large and small providers was, "We want to help serve the unserved areas, but until we get those who are already served to actually subscribe, we cannot continue to invest in areas where we will lose money." When we conducted surveys to understand the barriers to Internet and broadband adoption, the results showed that the top reasons people did not subscribe were not associated with cost of the service or lack of availability, but rather that people did not own a computer or did not understand why they needed broadband. It was research such as this that laid the groundwork for the development of a demand-driven model for broadband expansion. By using statewide demand creation and local technology planning in every community, the model benefits both providers and the state. Take-rates in served areas go up, revenue goes up, investment dollars go up...and then providers are vested in the program and are often willing to move outside their comfort zone to help unserved areas. Meanwhile the generation of demand in these unserved areas often creates a business case for investment where before there was none. And increased technology adoption throughout the state increases the workforce development skills of the citizenry, makes businesses more productive, improves healthcare and education, enhances government services, and creates a better way of life.

As such, a key component of the ConnectKentucky program is its demand-driven model whereby statewide demand generation drives supply into unserved areas. Another critical component is the time that was invested to develop relationships with providers to assure them their sensitive broadband infrastructure data would be protected and used in ways that benefit the state and its citizens, but would also benefit them and their counterparts by creating market intelligence maps to fill the broadband gaps. The non-governmental status

of ConnectKentucky allows for nondisclosure agreements to legally ensure that provider data are held confidential. Fortunately, these relationships with providers that developed over years and through countless discussions are now being used to enable a similar model in other states through the non-profit Connected Nation, which was formed in response to other states' requests for help with broadband expansion.

Yet another key feature to ConnectKentucky's work continues to be its research-based approach to strategic development, which enables the creation of targeted programs and applications that fit the needs of each specific community. Beyond accurately measuring the inventory of broadband services to increase investment, ConnectKentucky's county-level statistical consumer surveys guide and direct the local planning teams to create applications that are relevant to local citizens and businesses, and it offers insight for providers, policymakers and local leaders into consumers' technology adoption and usage patterns. This rich information on consumer needs enables the development of programs such as No Child Left Offline – a computer distribution program for disenfranchised populations – to target people who are most in need of computers.

Although ConnectKentucky uses the FCC's existing 200 kilobits definition of "high-speed," wasn't the majority of service you found well above that? What speeds did you find? What's more important for success, setting a definition, or taking an inventory of all the different speeds available?

ConnectKentucky has resisted the urge to set strict definitions around what is or is not broadband. By taking an inventory of all available speeds, policymakers and consumers have a full set of information to make decisions. While the 200k definition is a starting point for separating dial-up from more advanced speeds, it is just as important for consumers to understand where 768k service exists as it is for them to know where 100mb service exists, and everything in between. ConnectKentucky collects data across all types of technologies and platforms, and the vast majority of these providers average between 2mb to 3mb download range for advertised speeds.

Connected Nation is currently implementing a state-based consumer online speed test, following the lead of the Communications Workers of America's Speed Matters campaign. These state-based tools will enable granular data collection of *actual* speeds with a representative sample for all communities.

Since different consumers have different needs and different amounts of money they are willing to spend, isn't it important to identify a range of services, from as low as 200 kilobits per second to as high as 100 megabits per second? If we set too high a standard, don't we actually risk increasing the digital divide?

Yes, as stated above, the identification of a range of services provides consumers and policymakers with a complete set of information for effective decision-making. Often consumers may not want to subscribe to extremely high bandwidth solutions, but rather want to know all their Internet options. A broadband map that identifies the most granular

gaps in broadband availability provides the consumer with the ability to understand all service options.

If broadband is defined at a particular speed and services below that level are not captured, we create the risk of leaving consumers less informed. Similarly, if lower speed tiers are ruled out, communities and providers are left with fewer options for creating solutions in unserved areas. For example, in many Kentucky communities where only dial-up service existed and extremely low household density has denied return on investment for traditional wireline solutions, providers and local officials have partnered to develop cost-effective fixed wireless solutions providing speeds that effectively support a range of applications previously unattainable by local residents and businesses. These communities are now using e-government processes for improved citizen services and online community discussions for enhanced civic engagement. Residents can take online classes, students can complete homework online, small businesses can get the bandwidth necessary for operation, and these rural communities now have access to dramatically-improved economic and community development opportunities. Moreover, often these first-pass solutions prove there is sufficient demand for services, and additional, higher bandwidth, solutions follow. If broadband definitions had been set too high, these communities could have found themselves with no middle ground solution, and would likely still be unserved.

What types of data did you collect? Did it differ depending on the types of technology and networks different providers use?

Connected Nation primarily collects two types of data – broadband *availability* data collected from providers, and broadband *adoption* (subscription) data collected from consumers.

To build the broadband map, the first question we must answer is, "Which households have broadband service available to them, and which do not?" To answer this question, we rely on providers to share data regarding the location of their infrastructure to enable a comprehensive picture of broadband availability. The type of infrastructure data we collect from providers is usually proprietary and competitively sensitive, and therefore we work directly with individual providers to establish nondisclosure agreements to protect the infrastructure data itself. Connected Nation then uses the data to create a picture of broadband service offerings and gaps in a particular area down to the most granular household level. These service areas and gaps are verified at the local level through grassroots teams.

The types of data we collect from individual providers vary by platform, technology and provider. For example, for wireless providers, we work to understand various elements of their wireless network such as tower heights and frequencies in relation to the topography of a particular area, which we then compile within a software program to develop a detailed view of the area and households the wireless signal actually reaches.

Conversely, if we had asked providers for data on their *subscribers* within a certain geographic unit such as nine digit zip, we would not understand where service is actually offered. More importantly, providers would be restricted to data delivery within a format

that assuredly overstates service. Similar to the challenges faced by the FCC with a zip code level system of data collection, a nine digit zip code system would help uncover some of the gaps in service, but would not provide a map that comprehensively demonstrates the broadband gaps.

Meanwhile, we do collect subscriber data straight from the source – the consumer. We conduct county-level statistical telephone surveys to generate localized data on technology use, barriers, preferences and needs among residents by demographic and among businesses by industry sector and size. These data are then used in combination with the broadband map with providers to drive deployment into unserved areas, with state and local policymakers to empower informed decision-making, with local technology planning teams to support targeted and cost-effective investments and online applications, with stakeholders across the state to strategically develop statewide programs to address the needs of consumers, and finally, to benchmark the progress of technology adoption.

In addition to telephone surveys, Connected Nation is implementing state-level online consumer speed tests, similar to that of the Communication Workers of America's Speed Matters campaign. Consumers are able to go online and test their actual speeds (as opposed to advertised speeds), and these data are compiled in combination with the broadband availability map to understand actual speeds at a local level.

Did you collect data that carriers already had? How did you minimize the reporting burdens?

Connected Nation works directly with individual providers to understand the most meaningful and least burdensome format for data sharing in order to provide the most accurate and representative picture of broadband availability. Our years of experience in working with providers across platforms have evolved into a process that amounts to a preference list for providers, depending on how each houses and structures its data.

What kind of response did ConnectKentucky get from industry? Did carriers provide data voluntarily? If so, what encouraged them to do so?

In the initial stages of the implementation plan providers were understandably cautious about sharing proprietary information. ConnectKentucky worked diligently to engage providers, building a coalition of broadband providers who were willing to share their data for the greater good of expanded broadband availability and adoption, while protecting proprietary information through non-disclosure agreements. Now that providers understand the comprehensive nature of the program – how it simultaneously addresses both supply and demand – the overwhelming response from industry has been and continues to be positive.

A key element in generating industry participation and excitement has been the demand-driven nature of the program. That is, while the broadband map is created from a supply standpoint, there is a simultaneous effort across an entire state to generate grassroots support for broadband adoption in both served and unserved areas. Local technology

planning teams in every community create tactical action plans for more effective technology investment across community sectors, education and awareness campaigns among targeted populations on the benefits of broadband, technology literacy programs such as computer distributions and training, and specific online applications to make technology relevant to the needs of each community. This process not only serves as the underlying driver of supply into unserved areas (by generating or demonstrating demand where before providers were not aware of it) but perhaps even more importantly, improves workforce, economic and community development opportunities for every community across the state.

Another essential piece for providers is the market intelligence maps that Connected Nation generates partially as a result of the broadband data that providers share. These market data maps are not competitively sensitive, yet they give providers a picture of the market in unserved areas in an effort to better match their business models for investment – household density at the Census block level, proposed roads and water lines, existing structures that could be used for deployment, terrain analysis, adoption/usage patterns and propensity to adopt, among other factors. As such, providers are offered the tools to help them make effective and sustainable investment decisions. Connected Nation uses these maps on behalf of communities and consumers to incite deployment into unserved areas, and they are used as one critical piece of the puzzle to find the most cost effective and sustainable solution for unserved areas.

What is involved in the mapping process? How long did it take? How much did it cost, and what were your sources of funding? Would you expect the costs to be similar or different across states? What are the cost factors?

The mapping process for ConnectKentucky was developed over a multi-year process during which we conducted a significant level of research with providers, officials and consumers across the state in an effort to develop a model that works. We continue to refine that process.

The key to making the mapping work is establishing relationships and trust with providers, taking their data and transforming it – based on each platform – into a clean, accurate and meaningful format, and then maintaining an ongoing relationship with providers to ensure that we receive regular and comprehensive updates to the map in order to maintain a current picture of broadband deployment and growth.

The cost of mapping is very difficult to separate from the cost of a statewide broadband expansion program that is demand driven. That is, the mapping is highly dependent upon the grassroots technology planning process that takes place in every community – both in order to generate excitement among providers for data collection as well as to create the business case for provider investment into unserved areas. That said the average cost of a statewide program that comprehensively addresses both supply and demand to fill the broadband gaps and increase adoption levels is approximately $2.5 million per year over the course of three years. Connected Nation works with states to form a public-private partnership for project funding, with 80% of funding from the public sector (state and federal), and 20% of funding from the private sector.

The cost of the ConnectKentucky project during its implementation years ran between $2.5 million and $3 million per year over the course of three years – similar to the cost of what we estimate it will cost in other states. The difference in Kentucky is that the cost of research and development in the years preceding implementation are costs that other states will fortunately not have to bear, as that work was done on the front end in Kentucky.

The cost factors for mapping are based mainly on population, as this is the primary indicator of the number of providers and potential providers within a given state, as well as the resources required for data collection, integration and maintenance.

Once you had this map, how did you use it to increase broadband deployment?

ConnectKentucky uses the broadband map in combination with local technology strategic plans, consumer research and market data maps to work collaboratively with communities and providers to develop a business case for sustainable and cost effective deployment into unserved areas.

The key to enabling this process is ensuring that the broadband map accurately identifies the most granular gaps in broadband service availability. Often, once providers understand where these areas exist and the market that each contains, not just one, but several providers are willing to serve those areas.

Once your maps identified untapped markets, how willing was industry to deploy?

Since early 2004, broadband availability in Kentucky has increased from 60% of households to 94% of households as of mid 2007. This accounts for more than $750 million in private sector investment in telecommunications infrastructure. Some of this investment would have occurred based on existing market demand. Another large piece of it – mainly in the hardest to reach areas – has occurred as a result of providers identifying untapped markets through market intelligence maps and communities demonstrating consumer demand in unserved areas through grassroots teams.

Because different areas need different solutions, ConnectKentucky has served and continues to serve as point of reference for providers to build a business case for deployment based on the mapping data, market intelligence and needs of a particular area. The mapping process coupled with the grassroots planning efforts is cultivating a market that drives investment.

How does ConnectKentucky address consumer demand, as well as broadband supply? How important is that to the program? Does it make sense to expect carriers to increase broadband deployment if there isn't also an increase in demand?

Beyond accurately measuring the inventory of broadband services to increase investment, ConnectKentucky's consumer-level research guides and directs the grassroots technology

planning work of eCommunity Leadership Teams in every community. This work includes the creation of relevant applications to facilitate consumer demand and technology adoption. The eCommunity Leadership teams specialize in enabling communities to effectively and efficiently leverage technology by assessing the existing use of technology and identifying best practices and the best means of acquiring new technology. Each of Kentucky's 120 counties has an established eCommunity Leadership Team comprised of high-level representatives from nine different sectors of the community – healthcare, K-12 education, higher education, business and industry, agriculture, libraries, community-based organizations, tourism, recreation, and parks and government. With assistance and tools from ConnectKentucky, these teams have developed strategic technology expansion plans that provide detailed, step-by-step action plans for most effectively using technology across community sectors, thereby creating demand for more advanced applications and services.

As mentioned above, during ConnectKentucky's research years, the resounding message from both large and small providers was, "We want to help serve the unserved areas, but until we get those who are already served to actually subscribe, we cannot continue to invest in areas where we will lose money." When we conducted surveys to understand the barriers to Internet and broadband adoption, the results showed that the top reasons people did not subscribe were not associated with cost of the service or lack of availability, but rather that people did not own a computer or did not understand why they needed broadband. It was research such as this that laid the groundwork for the development of a demand-driven model for broadband expansion. By using statewide demand creation and local technology planning in every community, the model benefits both providers and the state. Take-rates in served areas go up, revenue goes up, investment dollars go up…and then providers are vested in the program and are often willing to move outside their comfort zone to help unserved areas. Meanwhile the generation of demand in these unserved areas often creates a business case for investment where before there was none. And increased technology adoption throughout the state increases the workforce development skills of the citizenry, makes businesses more productive, improves healthcare and education, enhances government services and creates a better way of life.

You said in your testimony that the regulatory environment in Kentucky was not conducive to broadband investment. How did your non-regulatory approach to mapping and your work on consumer demand improve the business case for deployment?

The non-regulatory approach enables a collaborative environment for providers, policymakers, communities and consumers to pool resources and develop customized solutions that make sense for the needs of each area. At the end of the day, we are all after the same thing – increased access to and availability of broadband and its many benefits. As mentioned above, the collaborative mapping process with providers enabled a true broadband gap identification map at a very granular level, allowing all stakeholders to work together to fill the gaps. These gaps are filled by using a combination of local consumer research, grassroots technology planning, identification of resources, and mapping of market data to bring providers and communities together for sustainable and

cost effective broadband solutions.

What features does the discussion draft share with your program? How is it different?

The discussion draft dated July 18, 2007 shares the basic model of the ConnectKentucky program in that it addresses both supply and demand through the creation of a broadband map while also enabling a grassroots-level technology planning process.

The primary differences are:

1. The discussion draft calls for a national broadband map that is generated through provider subscriber data within a specified geographic unit, similar to the process currently used by the FCC at the zip code level. The draft calls for the FCC to collect broadband subscriber data and the NTIA to use that broadband subscriber data to create a map at a more granular level than the zip code; however, even at a nine digit zip level, the map will continue to show data that leaves gaps unidentified and many unserved areas inaccurately represented as served. To this end, the grant program for states established in the discussion draft is an effective avenue for states to develop public-private partnerships that enable a collaborative data sharing environment with providers. The key difference in the discussion draft and the Connected Nation model is that the current draft does not require states to develop broadband *availability* maps that provide a granular level of gap identification. If this requirement is not clear, states could use grant funding to develop the same or a very similar map to what the draft requires the NTIA to create with FCC data.

2. A crucial element in the success of the ConnectKentucky local technology planning process has been the foundation of robust consumer research conducted at a community level. This information on technology adoption, barriers to adoption, and preferences and needs among consumers in each specific community is the driver in effective program development and targeted application creation by local teams. It is strongly recommended that a requirement for a statistical community-level measurement of consumer adoption be conducted at the onset of the local technology planning process.

Are any other states following the ConnectKentucky model? What is Connected Nation?

Connected Nation is a national non-profit organization that was formed in response to the consistent requests from states for ConnectKentucky's help in developing similar initiatives. Connected Nation's mission is dedicated to closing the digital divide by increasing technology investment through its partnerships, programs and policies, empowering previously underserved communities and markets, and improving community life and economic development while enhancing markets for technology providers.

Connected Nation uses the ConnectKentucky model to create partnerships between the public and private sectors to encourage cooperation for mutually beneficial purposes – making the cost of technology expansion go down and the demand for technology go up.

Connected Nation is engaged in multiple states, including Tennessee, where Connected Tennessee is in its initial year of using the ConnectKentucky public-private partnership model to expand broadband deployment and usage statewide.

Is the ConnectKentucky model scalable? How can we replicate your success nationwide?

Yes, Connected Nation was developed to scale the ConnectKentucky model for any state. The Connected Nation model is predicated on the elements of the ConnectKentucky program; however, because the needs and resources of each state is different, Connected Nation has established a process of working with states to identify and bring both public and private resources to bear to develop a collaborative public-private partnership approach to technology expansion that fits each state. What Connected Nation brings is a network of proven resources, methodologies, experiences and relationships to help states create cost effective systems for expanding broadband access, increasing technology literacy and ultimately closing the digital divide.

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September 10, 2007

Mr. Ben Scott
Policy Director
Free Press
501 3rd Street N.W.
Washington, D.C. 20001

Dear Mr. Scott:

Thank you for appearing before the Subcommittee on Telecommunications and the Internet on Thursday, May 17, 2007, at the hearing entitled "H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection." We appreciate the time and effort you gave as a witness before the Subcommittee.

Under the Rules of the Committee on Energy and Commerce, the hearing record remains open to permit Members to submit additional questions to the witnesses. Attached are questions directed to you from certain Members of the Committee. In preparing your answers to these questions, please address your response to the Members who have submitted the questions and include the text of the Member's question along with your response.

To facilitate the printing of the hearing record, your responses to these questions should be received no later than the close of business **Tuesday, September 18, 2007**. Your written responses should be delivered to **316 Ford House Office Building** and faxed to **202-225-5288** to the attention of Philip Murphy, Staff Assistant. An electronic version of your response should also be sent by e-mail to Mr. Philip Murphy at **phil.murphy@mail.house.gov** in a single Word formatted document.

Thank you for your prompt attention to this request. If you need additional information or have other questions, please contact Amy Levine, Senior Counsel, Tim Powderly, Counsel, or Colin Crowell, Professional Staff Member with the Committee on Energy and Commerce, at (202) 226-2424.

Sincerely,

JOHN D. DINGELL
CHAIRMAN

Attachment

cc: The Honorable Joe Barton, Ranking Member
Committee on Energy and Commerce

The Honorable Edward J. Markey, Chairman
Subcommittee on Telecommunications and the Internet

The Honorable Fred Upton, Ranking Member
Subcommittee on Telecommunications and the Internet

September 18, 2007

Written Reply of Ben Scott, Policy Director, Free Press
Hearing of May 17, 2007, House Subcommittee on Telecommunications and the Internet
"H.R.__, a Discussion Draft Addressing Broadband Mapping and Data Collection"

1. ConnectKentucky

    a. Would you support applying the ConnectKentucky model nationwide?

The ConnectKentucky program has proven a valuable resource to help bring broadband to unserved areas, however I would strongly caution that it is not a substitute for appropriate federal oversight of the broadband market.

In my view, the Discussion Draft strikes a sensible balance between providing federal funds for state and local programs like ConnectKentucy while ensuring that the Federal Communications Commission fulfills its Section 706 obligations and creating tools at the NTIA to further support the public service goals of broadband deployment. The ConnectKentucky model has much in it to recommend. In particular, the combination of teams of local stakeholders with localized broadband data collection is a useful method to aggregate market demand and attract the cooperation of broadband carriers. This brand of on-the-ground needs assessment is a very useful innovation in the sector—though it does raise perplexing questions about the quality of the carriers' own market research.

However, there are limitations with the ConnectKentucky model. The data the program collects is exclusively proprietary. This means that the information about deployment in different geographic areas cannot be used by researchers, business leaders and policymakers to further inform policy and investment decisions. Further, the program does not collect information about price and speed of broadband connections. This is a significant limitation. It is particularly problematic in areas which are not wholly unserved but nonetheless have low broadband penetration rates. Finally, if programs like ConnectKentucky were to be instituted nationwide on a state by state basis, the information collected would not be comparable between states and the insights available from a bigger picture analysis would be unavailable.

Consequently, my recommendation would be to move forward with state and local programs like ConnectKentucky in conjunction with federal data collection. In particular, the federal program will ensure that policymakers have detailed, baseline information about the entire country on which to rely for broadband policymaking. Further, the price and speed data presented by federal agencies would add a new element to our understanding of where broadband markets are failing and why. These tools would in turn be very useful for state and local programs which could use them as a foundation on which their own activities could build.

September 18, 2007

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